

**EFFECTIVENESS OF ACUPRESSURE ON IMPROVING  
THE QUALITY OF SLEEP AMONG CANCER PATIENTS  
IN H.C.G CANCER CENTER  
AT ERODE**

**A DISSERTATION SUBMITTED TO  
THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY,  
CHENNAI IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF MASTER OF  
SCIENCE IN NURSING  
2009 – 2011**

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## TABLE OF CONTENT

CHAPTER	TITLE	PAGE NO
I	<b>(i)INTRODUCTION</b>	<b>1-18</b>
	➤ Background of the Study	1
	➤ Need for the study	8
	➤ Statement of the problem	14
	➤ Objectives of the study	14
	➤ Operational definitions	15
	➤ Hypotheses	17
	➤ Assumptions	17
	➤ Delimitations	17
	➤ Projected outcome	18
	<b>(ii)CONCEPTUAL FRAMEWORK</b>	<b>19-23</b>
II	<b>REVIEW OF LITERATURE</b>	<b>24-55</b>
	<b>PART-I</b>	
	➤ Over view of	
	a) Cancer	24
	b) Acupressure	34
	<b>PART-II</b>	
	A. Studies related to quality of sleep among cancer patients	41
	B. Studies related to sleep and acupressure among other patients	47
	C. Studies related to acupressure on improving the quality of sleep among cancer patients	50
	D. Studies related to sleep and other complementary therapies	52
III	<b>METHODOLOGY</b>	<b>56-62</b>
	➤ Research approach	56
	➤ Research design	56
	➤ Setting of the study	57
	➤ Population	57
	➤ Sample	57
	➤ Criteria for sample selection	57

<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE NO</b>
	❖ Inclusion Criteria	57
	❖ Exclusion Criteria	58
	➤ Sample size	58
	➤ Sampling technique	58
	➤ Instrument	58
	❖ Description of the instrument	
	❖ Scoring procedure	
	➤ Validity and reliability of the tool	59
	➤ Pilot study	60
	➤ Procedure for data collection	61
	➤ Data analysis	62
	➤ Protection of human subjects	62
<b>IV</b>	<b>DATA ANALYSIS AND INTERPRETATION</b>	<b>63-84</b>
<b>V</b>	<b>DISCUSSION</b>	<b>85-90</b>
<b>VI</b>	<b>SUMMARY , CONCLUSION</b>	<b>91-96</b>
	➤ <b>IMPLICATIONS</b>	
	❖ Nursing service	93
	❖ Nursing education	94
	❖ Nursing administration	94
	❖ Nursing research	95
	➤ <b>RECOMMENDATIONS</b>	95
	➤ <b>LIMITATIONS</b>	96
<b>VII</b>	<b>BIBLIOGRAPHY</b>	<b>97-100</b>
	➤ <b>References</b>	
<b>VIII</b>	<b>APPENDICES</b>	

## LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
1	Conceptual frame work.	23
2	Percentage distribution of cancer patients according to their age.	68
3	Percentage distribution of cancer patients according to their sex.	69
4	Percentage distribution of cancer patients according to their educational status.	70
5	Percentage distribution of cancer patients according to their marital status.	71
6	Percentage distribution of cancer patients according to their occupational status.	72
7	Percentage distribution of cancer patients according to their religion.	73
8	Percentage distribution of cancer patients according to their family income.	74
9	Percentage distribution of cancer patients according to their duration of illness.	75
10	Percentage distribution of cancer patients according to their type of treatment.	76
11	Percentage distribution of quality of sleep among cancer patients before and after intervention.	80

## LIST OF TABLES

Table No.	Title	Page No.
1	Frequency and percentage distribution of demographic variables of cancer patients.	64
2	Frequency and percentage distribution of quality of sleep among cancer patients before intervention.	77
3	Frequency and percentage distribution of quality of sleep among cancer patients after intervention.	78
4	Comparison of frequency and percentage distribution of quality of sleep among cancer patients before and after intervention.	79
5	Comparison of mean, standard deviation and "t" value before and after intervention.	81
6	Association between the quality of sleep after intervention among cancer patients with their selected demographic variables.	82

## LIST OF APPENDICES

APPENDIX	CONTENT	PAGE NO.
A	Letter seeking permission for conducting the study	i
B	Letter seeking for experts opinion for content validity	ii
C	List of experts for validation	iii
D	Certificate for validity	iv
E	Certificate for English editing	ix
F	Certificate for Tamil editing	x
G	Tools <ul style="list-style-type: none"> <li>• English</li> <li>• Tamil</li> </ul>	xi
H	Self instructional module <ul style="list-style-type: none"> <li>• English</li> <li>• Tamil</li> </ul>	xxix
I	Procedure	xliii

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## **ABSTRACT**

Cancer is a group of more than 200 diseases characterized by uncontrolled and unregulated growth of cells. It is a major health problem that occurs in people of all ethnicities. For patients with cancer, sleep is potentially affected by variety of factors such as cancer therapy biochemical changes. Sleep disorders, such as difficulty falling asleep problems maintaining sleep, poor sleep efficiency, early awakening, and excessive daytime sleepiness, are prevalent in patients with cancer.

Sleep disturbances lead to a lower quality of life and may even lead to immune dysregulation and increased mortality in these patients. More studies has to elucidate the effectiveness of alternative therapies on their quality of life and outcome.

Study was done to evaluate the effectiveness of acupressure on improving the quality of sleep among cancer patients in H.C.G cancer center at Erode.

The conceptual framework of the study was based on the “Neuman’s system model“. It has three dimensions of prevention and reconstitution.

The research design used was pre experimental one group pre test post test design .Non probability purposive sampling method was used to select the 60 samples for the study. The tool used for this study was Pittsburg Sleep Quality Index (PSQI) scale before and after intervention. Acupressure is given at 3 points( back of the ear ,wrist and calf muscle for 3min /acupoint on the same day after completion of pre

test and it was given for 7 days continuously before bedtime. The data gathered was analyzed using descriptive and inferential statistics.

The score of sleep after intervention is lower than the score of sleep before intervention. The 't' value is 23.06 (1.96), which was significant at 0.05 level .

This study revealed that there is a significant improvement in the quality of sleep among cancer patients after acupressure and also there is no association between the quality of sleep among cancer patients after intervention with their selected demographic variables.

# **CHAPTER – I**

## **INTRODUCTION**

**“Sleep is the golden chain that ties health and our bodies together”**

**Muller T., (2009)**

### **BACKGROUND OF THE STUDY**

Sleep, we all love it, especially when wake up from a night sleep. In the past, sleep was often ignored by doctors and surrounded by myths, but now we are beginning to understand the importance of sleep to overall health and well-being. In fact, when people get less than 6 or 7 hours of sleep each night, their risk for developing disease begins to increase.

**Stibich M.,(2009)**

Sleep is one of the body's most complex biologic rhythms. Circadian synchronization exists when an individuals sleep -wake patterns follow the inner biologic clock .When physiologic and psychologic rhythms are high or most active ,the person is awake; when these rhythms are low ,the person is asleep.

**Taylor C., (2005)**

Adequate sleep is essential for healthy functioning and survival. Inadequate sleep practices are common in adolescents and young adults. The adults need between 6 to 10 hours of sleep each night, but thus can vary. It is unusual for young adults to take regular naps. Sleep disturbances are common; insomnia is particularly common often caused by anxiety, depression or certain physical illness.

Sleep deprivation is a form of stress and when we are stressed our body reacts in a way that is not beneficial in the long run.

**National Sleep Foundation., (2002)**

8 hours of sleep a night has been the accepted standards for adults , despite obvious variations seen in the general population. An adults average sleep duration is 7-9 hours.

**Taylor C .,(2005)**

Current theory indicates, sleep is thought to be an active inhibitory process .Therefore the control and regulation of sleep may depend on the interrelationship between two cerebral mechanisms that intermittently activate and suppress the brain's higher centers to control sleep and wakefulness.

**Potter A.P.,(1997)**

Sleep is a recurrent, altered state of consciousness that occurs for sustained periods .When people obtain proper sleep, they feel that their energy has been restored. Some sleep experts believed that these feeling of energy restoration imply that sleep provides time for the repair and recovery of body systems for the next periods of wakefulness.

**Potter A.P.,(1997)**

A poor night's sleep for the client often starts a vicious cycle of anticipatory anxiety with fear that sleep will again be disturbed as the client tries harder and harder to sleep.

**Attarian P.H .,(2000)**

Many people have sleep disturbances that go undetected for years, progressively undermining their energy level and destroy their sense of self. Sleep loss that results in fatigue and decreased competence may be a contributing factor in accidents.

**Taylor C., (2005)**

The person who is deprived of restful sleep is less alert, less attentive, less able to perform even simple tasks, more irritable and has poor concentration and judgment and mood problems that make relationships with family, friends, co workers difficult. So inadequate sleep reduces the quality of life and is harmful to health.

**White L., (2002)**

Sleep pattern dysfunction affects most activities of daily living in varying degrees, closely linked to quality of life in the sense of feeling well rested and refreshed; with energy available for activity .Lack of sleep impairs coping and cognitive responses.

**Craven F.R., (2003)**

One of the major complaints of cancer patients is disturbed sleep. Patients with cancer complaints of difficulty falling asleep difficulty staying asleep, and non restorative sleep, before, during and for years after treatment.

**Liu L., (2008)**

Many of the symptoms of cancer are the depression and anxiety associated with it, can make the patient to lose sleep.

**Joggi O .P., (1995)**

Cancer patients are at great risk for developing insomnia and disorders of the sleep -wake cycle .Insomnia is most often secondary to physical and or psychological factors related to cancer and cancer treatment and hospitalization are highly correlated with insomnia.

**Bell M. R.,(2004)**

The number of hours of sleep per night necessary for an individual to be fully functional is still unknown because the function of sleep has yet to be fully determined. Some people claim full effectiveness with only 3- 5 hrs of sleep, others admit to needing 8 (or more) hours of sleep per night to perform effectively.

**Russo B .M.,(2009)**

Sleep disruption is sometimes associated with illness, cancer patients in particular may be more vulnerable because specific treatments like hormone therapy and chemotherapy, can lead to physiological side effects associated with insomnia and fatigue.

These patients reported that sleep disruption was a major problem for many of them .Hot flashes and night sweats were a major cause of sleep disturbance .Sleepiness /tiredness /fatigue led to less daytime wakefulness and less overall ability to function normally. Many of them experienced anxiety about prognosis or recurrence.

**Weinfurt K., (2009)**

Cancer - related fatigue is reported by patients to be the most distressing and persistent symptom experienced during and after treatment. Unrelieved fatigue often accompanies other symptoms and

leads to decreased physical functioning and lower health -related quality of life.

**Berger M .A., (2009)**

Sleep disturbances occur in about 12% -25% of the general population and are often associated with situational stress, illness aging and drug treatment. It is estimated that 45% of people with cancer experience sleep disturbance. Physical illness, pain hospitalization drugs and other treatments of cancer, and the psychological impact of a malignant disease may disrupt the sleeping patterns of persons with cancer. Poor sleep adversely affects day time mood and performance.

**Graci G.et.al.,(2010)**

Sleep disturbances lead to lower quality of life and may even lead to immune dysregulation and increased mortality in these patients more studies need to be done to elucidate the various effects of sleep disturbances on cancer patients as well as the effects of therapies on their quality of life and outcome.

**Rumble M .E.et. al.,(2009)**

It is an accepted fact that modern day anti- cancer strategies also results in increased levels of fatigue, anxiety, depression with consequent effect on physical and mental function, resulting in deterioration of quality of life in many instances. Complementary and alternative medicine has therefore made significant inroads as an accessory modality in cancer care, providing a feasible option for improvement in general well being, palliation or occasionally even cure.

**Munshi A .et. al.,( 2008 )**



Recently, alternative therapies have emerged and become very popular in the west, particular the use of Chinese medicine .The increasing cost of health and pharmaceutical products has made them unaffordable and hence unavoidable for everyone.

Many sufferers begin to turn to other alternative methods, which offer hope in their desperation. Acupressure is the least invasive and perhaps the safest since it only involves the contact of the patient's body through massages.

**Alexander T.Y.,(2001)**

The stimulation, just by the pressure of hand of some of the meridian points, is called acupressure treatment and has been found to give surprising results. Knowledge of acupressure points comes handy when regular medical aid is not available. Problems like acute head ache, back ache, stomach ache, nausea, etc. can be easily but effectively dealt with by using acupressure.

Treatment through acupressure has the additional advantage of being completely without any side effects. With a simple pressure at a particular point on the body one can give relief to the patient, or to oneself, and that is why this variation of the system of Chinese acupressure is becoming very popular these days.

**Agarwal A. L., (1985)**

Insomnia is a major problem which decreases life quality. Many causes are involved, among them melatonin and its circadian rhythm is thought to have an important role. Acupressure and acupuncture are known to ameliorate insomnia and anxiety when a specific wrist point is stimulated.

**Nordio M. et.al., (2008)**

Acupressure can be effective in helping relieve headaches eyestrain, sinus problems, neck pain, backaches, arthritis, muscle aches and tension due to stress. It also uses self acupressure to relieve anxiety and to help to get sleep at night.

**Vaughan B.,(2005)**

Acupressure or acupuncture has been researched and found to alleviate lower back pain, headaches, osteoarthritis pain, neck pain musculoskeletal pain, pain before and after surgery, postoperative and chemotherapy induced nausea and managing sleep disturbance in chronic illness patients .

**Freeman L., (2001)**

Self administered acupressure was exceedingly safe and well tolerated and the acupressure treatment appeared to be an acceptable treatment for cancer survivors.

**Zick M.S.,(2010)**

Sleep problem among cancer patients may be often overlooked because so many other issues, such as surgery, radiation, or chemotherapy, arise so urgently. Studies found that when it comes to overall impact upon quality of life, sleep disruption is highly significant It also need to recognize that patients feel that high quality sleep is an important factor in their fight against cancer.

There is a growing body of literature addressing the effectiveness of treatments for fatigue. However, less evidence is available to guide the management of insomnia in patients with cancer. As health care providers, we can do better .This is definitely an area that needs more attention.

**Flynn K. V.,(2007)**

## **NEED FOR THE STUDY**

10 million new cancer cases seen each year worldwide, 4.7 million are in the more developed countries and nearly 5.5 million are in the less developed countries. Although the disease has often been regarded principally as a problem of the developed world, more than half of all cancers occur in the developing countries. In developed countries, cancer is the second most common cause of death.

Cancer is currently the cause of 12% of all deaths worldwide. In approximately 20 years time, the number of cancer deaths annually will increase from about 6 million to 10 million.

**Dinshaw K. A.,(2003)**

In the year 2000, malignant tumors were responsible for 12 percent of the (nearly 56 million )deaths worldwide from all causes .In many countries ,more than a quarter of deaths are attributable to cancer In 2000, 5.3 million men and 4.7 million women developed a malignant tumor and altogether 6.2 million died from the disease. The report also reveals that cancer has emerged as a major public health problem in developing countries, matching its effect in industrialized nations.

**WHO.,(2000)**

American Cancer Society reporting 12 million new cases of malignancy diagnosed worldwide in 2007, with 7.6 million people dying from the disease. In the 20th century, tobacco use caused about 100 million deaths around the world. In this century, that figure is expected to rise to over 1 billion people. Most of these will occur in developing countries.

**Jemal A.et.al.,(2007)**

Cancer causes 9% of death throughout the world. In the developed countries cancer is the second leading cause of death, next to cardiovascular disease accounting for 19% of all mortality. In developing country it ranks fourth and account 6% of all death .In India with the control of communicable diseases and increases in life expectancy, cancer in the country is rising. Over 5 lakh new cases of cancer and 3 lakh deaths are estimated in the country every year.

**Mehta S.R.,(2007)**

Cancer prevalence in India is estimated to be around 2.5 million, with over 8,00,000 new cases and 5,50,000 deaths occurring each year due to this disease in the country .

Carcinoma breast and cervix are the most common malignancies noted in Indian females; while in males the most common malignancies are those of aero digestive tract that is lung stomach, esophagus and head and neck. About 2/3 of cancer. Patients need radiation therapy (RT) that is 5,00,000 patients per year.

**Mehta S .R.,(2010)**

The prevalence of insomnia that meets clinical criteria was 45.6% among cancer patients receiving chemotherapy, which compares with 19% in the general population. An additional 35% of cancer patients had insomnia symptoms ,compared with 15% in general population.

**Palesh O.,(2008)**

The survey included more than 2,00,000 patients with histopathologically confirmed cancers, it indicates that the incidence of gall bladder cancer in women in New Delhi is 10.6 per 1,00,000 population – the world's highest rate for women for this cancer. Districts in central, south, and north east India had the world's highest

incidence of cancers associated with tobacco, which is chewed as well as smoked in India. Aizawl district in the north eastern state of Mizoram has the world's highest incidence of cancers in men of the lower pharynx (11.5 per 1,00,000 people) and tongue (7.6 per 1,00,000 people).

The district also has the country's highest rate of stomach cancer among men. Wardha has the highest incidence of mouth cancer in the world. The incidence of mouth cancer among men in Pondicherry was 8.9 per 100 000, one of the highest rates in the world for men. Rates of stomach cancer were high among men in Bangalore and Chennai .The survey also detected a "belt of thyroid cancer" in women in coastal districts of Kerala, Karnataka, and Goa. The survey also confirmed earlier observations that breast cancer has replaced cervical cancer as the leading site of cancer among women in Indian cities and that lung cancer is the most common cancer in men in Calcutta, Mumbai and New Delhi.

**Parikh P.et.al.,(2007)**

Every year 12,000 cancer cases were reported Out of one crore population covering six districts in south Tamil Nadu.

**Muthukumarasamy P. K.,(2010)**

Erode district is witnessing an alarming number of cancer cases due to drinking water contamination from the deadly chemical discharge by various factory units into Kalingarayan canal. Erode district is one of the worst hit cancer districts in Tamil Nadu and as on date, within just 18 months of starting the H C G cancer hospital. 1,320 cancer cases were examined in Erode alone.

**Sudhahar P., (2010)**

Sleep disorders are reported to be very prevalent in patients with cancer but often unrecognized and unaddressed .Sleep disturbances have been found to affect between 30%-75% of cancer patients .This is twice that seen in patients with psychiatric disorders .These sleep disturbances are extremely troublesome to the patient and decrease the overall quality of life .More than 50% of cancer patients with sleep disturbances reported their symptoms to be moderate ,severe or intolerable .The highest rates of sleep disturbances are seen in hospitalized cancer patients and advanced cancer patients with prevalence rates as high 67%-72%

**Velamuri K.,(2007)**

Evidence suggests that a raised awareness of factors contributing to insomnia is indicated in the cancer population. A theme that emerges in the literature specific to insomnia in cancer patients is the need for assessment and optimal management of symptoms contributing to sleep disturbance.

When queried regarding attribution of their sleep disturbances, 45% of the cancer patients in a study identified physical discomfort as a factor.

**Bell M. R.,(2005)**

A study looking at 115 cancer patients ,the researcher found that during the period of chemotherapy 52% of patients had poor sleep quality (PSQI score more than 5) as compared to during their period without chemotherapy. During chemotherapy, patients had a longer sleep latency, poorer sleep efficiency and shorter sleep duration. The patients described various reasons for their sleep difficulties during

chemotherapy including getting up to go to the bathroom, wake up in the middle of night and waking up too early. Only 9-10% complained of pain as the reason for their sleep problems.

**Chen M.L et al., (2007)**

Patients experiencing a life threatening illness frequently report sleep disturbances such as insomnia or hypersomnia. Sleep disturbance among cancer patients, however, has received limited research attention. Estimates of the prevalence of sleep disturbance in samples of cancer patients have ranged from 23% to over 50%.

**Anderson O.K., (2009)**

A study among cancer patients using the Pittsburg sleep quality index (PSQI) and examined the relation between sleep disturbance and health related quality of life. Results showed that 61% of cancer patients had significant sleep problems. Sleep was characterized by reduced total sleep time with sleep frequently being disturbed by pain, nocturia feeling too hot, and coughing or snoring loudly. Cancer patients having significant sleep problems had greater deficits in many areas of health - related quality of life.

**Fortner V. B .,(2001)**

Cancer patients are at great risk for developing insomnia and disorders of the sleep- wake cycle. Insomnia is the most common sleep disturbance in this population and is most often secondary to physical and / or psychological factors related to cancer / cancer treatment.

Anxiety and depression, common psychological responses to the diagnosis of cancer, cancer treatment and hospitalization, are highly correlated with insomnia. Cancer associated insomnia is the extremely broad range of prevalence estimates 19% - 95%.

**Kvale E.,(2005)**

About 4 of 10 adults in the United States use some type of complementary and alternative medicine (CAM) therapy, with the rate being higher among patients with serious illnesses such as cancer. Nurses can play a critical role in the assessment and education of CAM use with survivor programs, with the ultimate goal being increased overall well-being and survival.

**Bell M.R., (2010)**

A study on Complementary and alternative medicine (CAM) use among 36 patients with locally advanced cancer patients shows 47 % were uses CAM. CAM users were more likely to be younger, married and of Asian ethnicity. This therapy was used concurrently with conventional treatment in 88% cases and patients had less severe anxiety and depression. Currently 20%-84% of cancer patients are using complementary therapies. So there should be more research in these ever growing field.

**Heyler K.L., (2006)**

Acupressure is used by millions of persons around the world Incorporating this technique into nursing care plans will unite us in the commonality we share –the desire to relieve human suffering.

**Serizawa K .,(1976)**



The researcher on her clinical experience has seen patients with cancer often complaints of sleep disturbances during their course of illness and treatment. By looking into the solution and from the above literature review the researcher had developed an interest to perform acupressure as an intervention to improve the quality of sleep in this study among the cancer population.

### **STATEMENT OF PROBLEM**

A study to evaluate the effectiveness of acupressure on improving the quality of sleep among cancer patients in H.C.G Cancer center at Erode.

### **OBJECTIVES**

1. To assess the quality of sleep among cancer patients before intervention.
2. To assess the quality of sleep among cancer patients after intervention.
3. To evaluate the effectiveness of acupressure on improving the quality of sleep among cancer patients.
4. To find the association between the quality of sleep after intervention among cancer patients with their selected demographic variables.

## **OPERATIONAL DEFINITIONS**

### **EFFECTIVENESS**

“It is a desirable result of action”

**Kindersley D.,(2007)**

In this study it refers to determine the extent to which the acupressure has brought about the results intended and is measured in terms of improvement in quality of sleep using statistical measurements.

### **ACUPRESSURE**

“Acupressure is an healing art that uses the fingers to press key points on the surface of the skin to stimulate the body’s natural self curative abilities”.

**Vaughan B., (2005)**

In this study it refers to the technique of applying pressure with fingers in HT-7 (Shenmen) wrist point, SP-6 (Sanjinijao) calf muscle point and Animan I and II back of the ear point of the body before bedtime for about 3 minutes per acupoint to induce sleep once in a day for 7 days.

### **QUALITY**

“Quality is the commitment and approach used to continuously improve every process with the intent of meeting outcomes”.

**Taylor C.,(2005)**

## **SLEEP**

“Sleep is a naturally occurring altered state of consciousness characterized by decrease in awareness and responsiveness to stimuli”.

**Craven F. R., (2003)**

## **QUALITY OF SLEEP**

In this study it refers to the safe and competent application of acupressure to improve the sleep process with reduced sleep latency long sleep duration and decrease in day time dysfunction thereby promoting the compliance which is measured by Pittsburg Sleep Quality Index (PSQI) scale and its scores.

## **CANCER**

“Cancer is a disease caused by the uncontrolled reproduction of cells and usually results in tumor”

**Kirby S.,(2010)**

In this study it refers to all type of cancer which requires treatment such as radiation therapy, chemotherapy and surgery.

## **PATIENTS**

“A patient is any person who receives medical attention, care or treatment”

**Fayed L., (2009)**

In this study it refers to a patient admitted as inpatient and receives treatment for cancer.

## **HYPOTHESES**

- H<sub>1</sub> :** The mean score of sleep after intervention is significantly lower than the mean score of sleep before intervention among cancer patients.
- H<sub>2</sub>:** There will be a significant association between the quality of sleep after intervention among cancer patients with their selected demographic variables.

## **ASSUMPTIONS**

- ❖ Majority of cancer patients experience sleep disturbances during the course of illness.
- ❖ Acupressure may help in improving quality of sleep among cancer patients.
- ❖ Nurses have an important role on improving quality of sleep by applying acupressure among cancer patients.

## **DELIMITATIONS**

The study is delimited to

- ❖ Sample size is 60
- ❖ Data collection period is 5 weeks.
- ❖ Patients who are admitted in the wards and remain for 8-10 days.

## **PROJECTED OUTCOME**

Acupressure improves the quality of sleep of cancer patients who have sleep disturbances. Promotion of sleep helps in physical as well as psychological wellbeing. Proper amounts of sleep enhance the ability to concentrate, make judgments, participate in daily activities and decrease in irritability. It also conserves energy and aids in healing and recovery from illness which helps the cancer patients to promote compliance with treatment protocol and promoting quality of life.

## **ii) CONCEPTUAL FRAMEWORK**

Conceptual framework helps to express abstract ideas in a more reality understandable or precise form of the original conceptualization . The conceptual framework adopted for this study is modified Neuman's system model.

### **GENERAL INFORMATION**

Neuman's model focuses on stress and stress reduction and is primarily concerned with the effects of stress on health .This model provides a total person approach to client problems by providing a multidimensional view of the person as an individual .Her comprehensive and dynamic model address the constant interaction between the client and environment.

### **BASIC CORE STRUCTURE**

Neuman considers the client to be an open system interacting with the environment .It encompasses the factors which include physiologic , psychological ,socio cultural ,developmental and spiritual variables for client survival.

In this study the basic core structure are the demographic variables such as age, sex, religion, marital Status, educational status, occupational status, Family income, duration of illness, type of treatment, which affects the quality of sleep.

## **LINES OF RESISTENCE**

It represents the internal factors of a person that help defend against a stressor. Attempts to stabilize the person and encourage a return to the normal line of defense.

In this study the resistance provided by means of patient's usual level of wellness to fight against the disease.

## **NORMAL LINES OF DEFENCE**

It refers to the equilibrium state or the adoption state that a client has developed over time. This state is the normal for the client.

In this study it refers to the patient's level of coping towards the cancer diagnosis and treatment.

## **FLEXIBLE LINE OF DEFENCE**

It acts as a protective barrier to prevent stressors from breaking through the normal line of defense. It can be affected by variables, such as loss of sleep, that reduce a client's ability to use a flexible line of defense against stressors.

In this study it refers to the family, social support and environment.

## **STRESSORS**

Stressors may include any tension -producing stimulus that has the potential to affect a person's normal line of defense.

**Intrapersonal factors**

Are those stimuli that occur within the individual .Include feelings, such as anger and fear.

In this study it includes the physical factors such as age, sex, pain fatigue and psychological factors such as anxiety, worries, type of therapy, stage of cancer and use of sleep medication.

**Interpersonal factors**

Are those stimuli that occur between individuals .It include pressures related to role expectation.

In this study it refers to family disequilibrium, role change and financial burden.

**Extra personal factors**

Are those stimuli that occur outside the person. It includes job or financial pressures.

In this study, it represents the environment/ hospital stay.

**PRIMARY PREVENTION**

Refers to the intervention before a reaction occurs; Seeks to interfere with the stressor's penetration into the normal line of defense.

In this study the nursing intervention include the environmental control.



## **SECONDARY PREVENTION**

Refers to the intervention after a reaction occurs .It includes early case finding and treatment of problems.

In this study it refers to the assessment of quality of sleep using PSQI scale and it classified as good sleep, fairly good sleep and poor sleep. It also includes implementation of acupressure after completion of pre test.

## **TERTIARY PREVENTION**

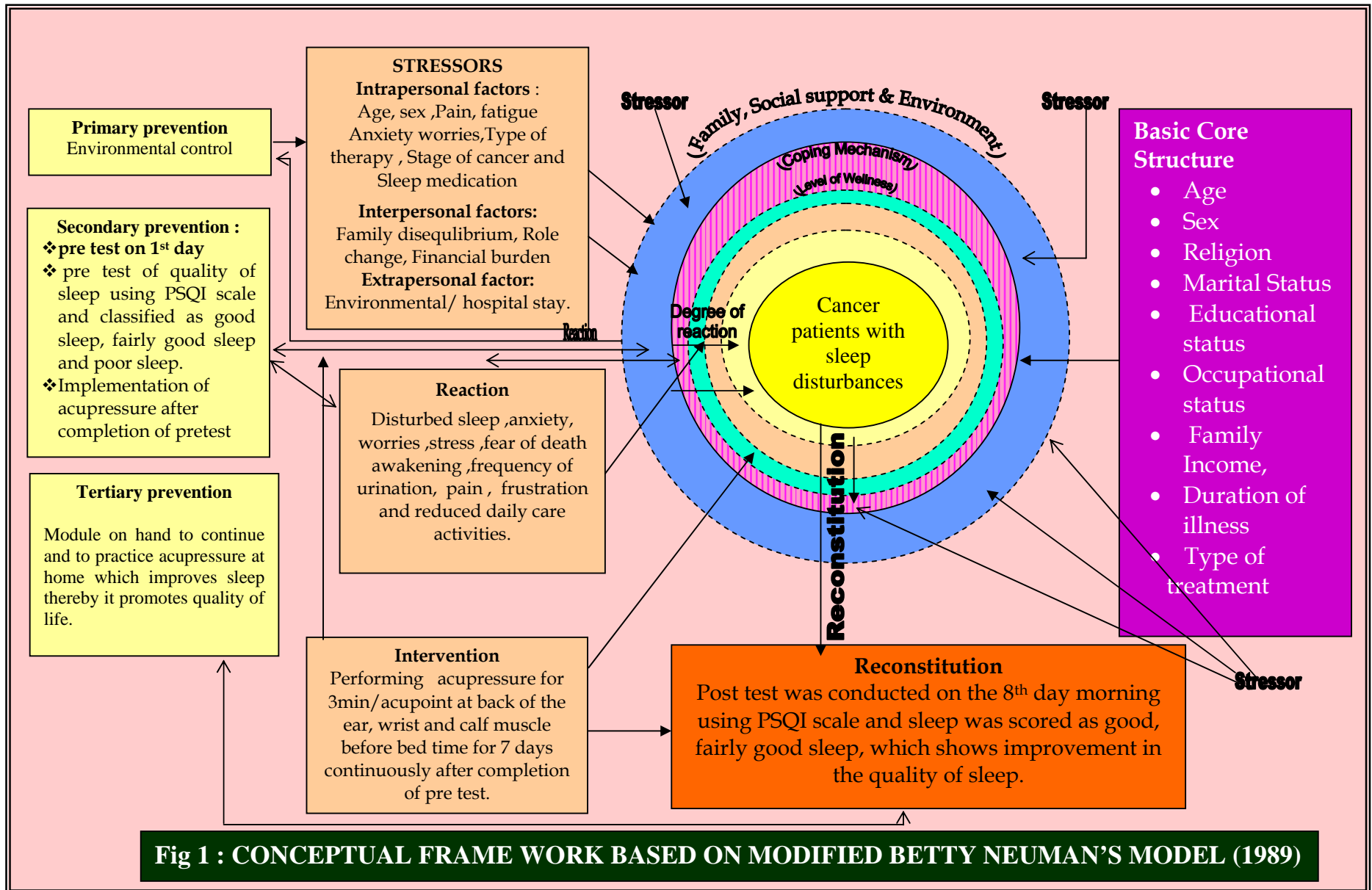
It mainly focuses on re-education measures, which leads to primary prevention.

In this study the tertiary prevention is done by providing a self instructional module on acupressure to continue and to practice at home.

## **RECONSTITUTION**

As a part of the reaction, a person's system can adopt to the stressor. This adoption is called reconstitution.

In this study the reconstitution is achieved by intervention which is assessed during post test on the 8<sup>th</sup> day morning using PSQI scale and sleep was scored as good sleep and fairly good sleep, which shows improvement in the quality of sleep.



## **CHAPTER – II**

An extensive review of literature done by the investigator to lay a broad formulation for the study.

The review of literature is organized under the following headings.

### **PART - I: Overview of**

- a) Cancer
- b) Acupressure

### **PART- II:**

- A. Literatures related to quality of sleep among cancer patients
- B. Literatures related to quality of sleep and acupressure among other patients
- C. Literatures related to acupressure on improving the quality of sleep among cancer patients
- D. Literatures related to other complementary therapies and sleep

### **PART-I**

#### **a) Overview of cancer**

#### **Definition**

“Cancer is a disease of the cell in which the normal mechanisms of the control of growth and proliferation have been altered”

**Black M.J.,(2001)**

## **Incidence**

Cancer affects people at all ages with the risk for most types increasing with age. It caused about 13% of all human deaths in 2007 (7.6 million). Cancers are primarily an environmental disease with 90-95% of cases due to lifestyle and environmental factors and 5-10% due to genetics. Common environmental factors leading to cancer death include: tobacco (25-30%), diet and obesity (30-35%), infections (15-20%), radiation, stress, lack of physical activity, environmental pollutants. These environmental factors cause abnormalities in the genetic materials of cells.

## **Causes and Pathophysiology**

Cancer is caused by the accumulation of multiple mutations in the DNA of a cell. Once a single cell becomes cancerous it, over time, expands into a large tumor. Mutations can be caused by many different mechanisms, not all are known. In addition, not all mutations lead to cancer. Hence, the cause for a specific case of cancer cannot usually be identified in the way that the cause of chicken pox can be attributed to transmission of Varicella-zoster virus. Instead, different factors impart a probabilistic risk to developing cancer.

**<http://www.wordiq.com>,(2000)**

## **Signs and Symptoms**

While advanced cancer may cause pain, it is not always the first symptom. Roughly, cancer symptoms can be divided into three groups:

- Local symptoms: unusual swelling (tumor in Latin means swelling), hemorrhage (bleeding), ulceration or jaundice.
- Symptoms of metastasis (spreading): enlarged lymph nodes, cough and hemoptysis, hepatomegaly (enlarged liver), bone pain, fracture of affected bones and neurological symptoms.
- Systemic symptoms: weight loss, poor appetite and cachexia, excessive sweating (night sweats), anemia and specific paraneoplastic phenomena, that is specific conditions that are due to an active cancer, such as thrombosis or hormonal changes.

**Joggi O.P.,(1995)**

## **Types of cancer**

Cancers originate within a single cell. Hence, cancers can be classified by the type of cell in which it originates and by the location of the cell.

Carcinomas originate in epithelial cells, e.g. skin, digestive tract or glands. Leukemia starts in the bone marrow stem cells. Lymphoma is a cancer originating in lymphatic tissue. Melanoma arises in melanocytes. Sarcoma begins in the connective tissue of bone or muscle. Teratoma begins within germ cells.

## **Adult cancers**

Adult cancers usually form in epithelial tissues and are believed often to be the result of a long biological process related to the interaction of exogenous exposures with genetic and other endogenous characteristics among susceptible people. Examples include: bladder carcinoma, blood (and bone marrow) - hematological malignancies, leukemia, lymphoma, Hodgkin's disease, non-Hodgkin's lymphoma, multiple myeloma, brain tumor, breast cancer, cervical cancer, colorectal cancer - in the colon, rectum, anus, or appendix, esophageal cancer, endometrial cancer - in the uterus, hepatocellular carcinoma - in the liver, gastrointestinal stromal tumor (GIST), laryngeal cancer, lung cancer, mesothelioma - in the pleura or pericardium, oral cancer, osteosarcoma - in bones, ovarian cancer, pancreatic cancer, prostate cancer, renal cell carcinoma - in the kidneys, rhabdomyosarcoma - in muscles, skin cancer (including benign moles and dysplastic nevi), stomach cancer, testicular cancer, and thyroid cancer.

<http://www.wordiq.com>,(2000)

## **Diagnostic measures**

### **History and physical assessment**

The first step in the diagnostic process is obtaining a complete history and physical examination. Some cancers are linked with certain genetic and environmental factors. Clinical manifestation are that may arise secondary to cancer include: weight loss, weakness /fatigue, CNS alteration, pain and metabolic alterations.

### **Radiographic procedures**

Basic x-ray studies, computed tomography, angiography, thermography, ultrasound, magnetic resonance imaging, bronchoscopy, thoracoscopy, mammography, xerography and radio isotope studies.

### **Antigen skin testing**

The dinitrobenzene (DNB) skin test is one method currently used to assess whether the chemical DNB, when it is placed on a small area of the skin.

### **Cytologic examination**

These examinations are to study of cells, their origin structure functions and pathology.

### **Blood /Hormonal studies**

Tumor markers and bio chemical test including acid phosphatase identify the extent of a particular type of cancer.

### **Unique imaging technique**

PET gives information about function of tissues such as their metabolic or physiological state, making PET a very useful tool for detecting cancers.

### **Screening**

Cancer screening is the widespread uses of tests to detect cancers in the population. It is often an inexpensive, noninvasive procedure. If signs of cancer are detected, more definitive and invasive follow up tests are performed to confirm the diagnosis.

**Mehta R.S.,(2007)**

## **Treatment of cancer**

Cancer can be treated by surgery, chemotherapy, radiation therapy or other methods. The choice of therapy depends upon the location and grade of the tumor and the stage of the disease.

### **Surgery**

Surgery is usually indicated in cases of localized cancers .It may be done either alone or in combination with other lines of treatment such as radiation and chemotherapy. If the cancer has not infiltrated into the surrounding areas and has not spread from the original site to different areas, then surgery may be all that necessary.

### **Radiation**

Radiation involves the exposure of a selected area of the body to a source of ionizing radiation or x-rays under carefully controlled conditions. Treatment planning involves accurate localization of the cancer and calculation of the total radiation dose to be given and dividing the same into daily fractions over a period of some days or weeks so that there is optimum response and minimum side effects.

**Joggi O.P.,(1995)**

Radiation therapy may be used to treat almost every type of solid tumor, including cancers of the brain, breast, cervix, larynx, lung, pancreas, prostate, skin, spine, stomach, uterus, or soft tissue sarcomas. Radiation can also be used to treat leukemia and lymphoma (cancers of the blood-forming cells and lymphatic system, respectively).

**[http:// www.wordiq.com](http://www.wordiq.com).,(2000)**



## **Chemotherapy**

Chemotherapy is the treatment of cancer with drugs that can destroy cancer cells. These drugs often are called "anticancer" drugs. Normal cells grow and die in a controlled way. When cancer occurs, cells in the body that are not normal keep dividing and forming more cells without control. Anticancer drugs destroy cancer cells by stopping them from growing or multiplying. Healthy cells can also be harmed, especially those that divide quickly. Harm to healthy cells is what causes side effects. These cells usually repair themselves after chemotherapy. Because some drugs work better together than alone, two or more drugs are often given at the same time. This is called combination chemotherapy.

**Joggi O.P.,(1995)**

## **Recent advancements in radiation therapy**

### **External beam therapy (teletherapy)**

Teletherapy is delivered through sophisticated machines like telecobalt which uses Co-60 source of about 1000 to 12,000 curie strength linear accelerators generating high energy x-rays (photons) and electrons.

### **Brachytherapy**

It is short distance therapy, where radioactive sources are put in applicators in accessible body cavities (intra cavity) or directly inserted in the tumor (interstitial).

**Mehta S.R.,(2007)**

## **Complementary and alternative medicine**

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine. It is important that the same scientific evaluation that is used to assess conventional approaches can be used to evaluate CAM therapies. In the United States, current trials are underway to test the following:

- Acupuncture to reduce the symptoms of advanced colorectal cancer,
- Combination chemotherapy plus radiation therapy with or without shark cartilage in the treatment of patients who have non-small cell lung cancer that cannot be removed by surgery,
- Hyperbaric oxygen therapy with laryngectomy patients (people who have had an operation to remove all or part of the larynx (voice box)),
- Massage therapy for cancer-related fatigue,
- Chemotherapy compared with pancreatic enzyme therapy plus specialized diet for the treatment of pancreatic cancer, and
- Mistletoe extract and chemotherapy for the treatment of solid tumors.

<http://www.wordiq.com>,(2000)

## **Experimental cancer treatments**

Experimental cancer treatments are medical therapies to treat cancer by improving or supplementing or replacing conventional methods such as

### **Angiostatic-based treatments**

The anti-angiogenesis (angiostatic) agent endostatin and related chemicals can suppress the building of blood vessels, preventing the cancer from growing indefinitely. In tests with patients, the tumor became inactive and stayed that way even after the endostatin treatment was finished. The treatment has very few side effects but appears to have very limited selectivity. Other angiostatic agents like thalidomide and natural plant-based substances are being actively investigated.

### **Bacterial treatments**

Chemotherapeutic drugs have a hard time penetrating tumors to kill them at their core because these cells may be dead or lack a good blood supply. Researchers have been using anaerobic bacteria, such as *Clostridium novyi*, to consume the interior of oxygen-poor tumours. These should then die when they come in contact with the tumour's oxygenated sides, meaning they would be harmless to the rest of the body. A major problem has been that bacteria don't consume all parts of the malignant tissue. However combining the therapy with chemotherapeutic treatments has largely proven to solve this problem.

### **Diet therapy**

Clinical experimentation by physician Max Gerson led to a therapy that is claimed to be successful in the treatment of advanced cancer, normalizing metabolism and helping the body's immune system act on cancer cells. It is a high potassium, low sodium (saltless) diet, with no fats or oils, and high in fresh raw fruits and vegetables and their juices.

<http://www.amazon.com>,(2000)

### **Insulin Potentiation Therapy**

In insulin potentiation therapy, low-dose insulin is given in conjunction with low-dose chemotherapy. It is claimed to be effective while dramatically reducing side effects.

### **Fasting Therapy**

For whatever reason, long-term fasting has been known to work against malignant tumors. Studies to date are merely anecdotal.

### **Gene therapy**

Introduction of tumor suppressor genes into rapidly dividing cells has been thought to slow down or arrest tumor growth. Another use of gene therapy is the introduction of enzymes into these cells that make them susceptible to particular chemotherapy agents; studies with introducing thymidine kinase in gliomas, making them susceptible to acyclovir, are in their experimental stage.

### **Thermal therapy**

- MR-guided focused ultrasound (MRgFUS)
- microwave thermal therapy

<http://www.amazon.com>,(2000)

## **b) Overview of acupressure**

It is an art and sciences of alleviating health problem by application of appropriate pressure on the surface of the body. Acupressure is also called Shiatsu in Japanese, Marma Shikista in Ayurveda, Varma Kalai in Siddha.

Acupressure is that branch of traditional medicines where the care is provided without the need of taking any medicines. This technique is being practiced in countries like Korea, China, Japan and India.

For the last 5000 year acupressure has been used to cure ailments or disease in these countries. This is a scientifically prove method of treatment. It is often used as either supplementary or complementary therapy along with the orthodox medicinal practice and treatment.

**Weiss P.,(2007)**

### **Definition**

Acupressure is defined as “an ancient healing art that uses the fingers to press certain points on the body to stimulate the body’s self curative abilities”

**Gach M.R.,(1990)**

### **Meridians**

Specific point on the surface of the body cater to nerve currents and blood circulations to various areas of human body. These also supply energy called “Vital energy” (Pran in India, chi in china and bioenergy in west).

Pran flows in living, it cannot be seen or measured. We observe its growth, development, movement and reactions, which disappear with death. The vital energy flows in human body through various paths across the human body known as “ Meridians”.

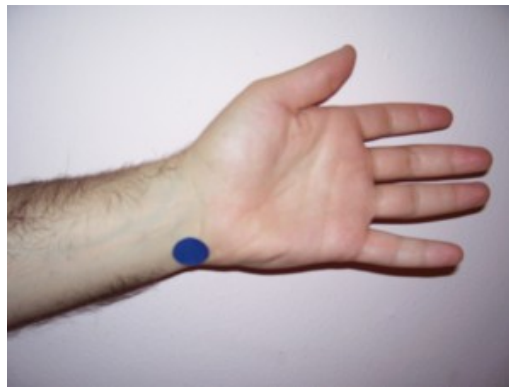
**Ummareddy M.,(2005)**

**Meridians are of two types:**

- i. Yin (or) Female meridians
- ii. Yang (or) Male meridians

Acupressure involves stimulating specific anatomic points in the body for therapeutic purposes.

**1.HT-7 – Shenmen : Wrist point**



**2.Animan I and II : Ear point**



### 3. Sp -6 Sanjinijao : Calf muscle point



Acupressure has been researched and proven that it alleviates lower back pain, headaches, neck pain, musculoskeletal pain, pain before and after surgery, post operative and chemotherapy induced nausea, vomiting and managing sleep disturbance in chronic ill patients.

**Ummareddy M.,(2005)**

#### **Scientific basis**

National center for complementary and alternative medicines (NCCAM), 2000 has found the mechanism by which acupressure alleviates the symptoms .Stimulation of the points with needles or with pressure may produce a therapeutic effect due to the following:

1. Conduction of electromagnetic signals that may start the flow of pain -killing biochemical ,such as endorphins ,and immune system cells to specific sites in the body that are injured or vulnerable to disease.
2. Activation of opioid systems, thereby reducing pain

3. Changes in brain chemistry, sensation and involuntary responses by changing the release of neurotransmitters and neurohormones in a health –promotion way.

**Mehta R.S.,(2007)**

### **Functions and Principles**

- ❖ It removes blocks if any in the flow of vital energy.
- ❖ It reinforces incase of any deficiency of the vital energy.
- ❖ If necessary it controls or sedates excess of vital energy.
- ❖ Establishes and reestablishes the energy equilibrium.
- ❖ Achieves proper or better homeostasis, alleviates pain.
- ❖ Energizes the deficient organs for recovery, removes toxins and harmful objects and giving a feeling of wellbeing.
- ❖ Regenerates the right kind of new tissues.

**Ummareddy M.,(2005)**

### **Advantages**

- ❖ Balances the body and maintain a good health
- ❖ Relieves pain
- ❖ Reduces the tension
- ❖ Improves circulation
- ❖ Enables the body to relax deeply by relieving stress
- ❖ Strengthens immunity to disease and promotes wellness
- ❖ Induces sleep
- ❖ Relieves pain in head and neck
- ❖ Promotes healing.

**Serizawa.,(1976)**



### **Contra indications**

- ❖ Seriously ill patients.
- ❖ Patients who are very hungry.
- ❖ Soon after food
- ❖ Patients with tiredness
- ❖ Patients with fracture
- ❖ Patients with contagious diseases.

**Serizawa.,(1976)**

### **Intervention**

A diagnosis is formulated and a treatment plan, which may use a variety of techniques, is implemented .Nurses will not follow this process and will therefore be using a Western symptom based system of determining the correct treatment plan

### **Guidelines for use**

Nurses can incorporate acupressure into the care of patients by using some common symptoms. The nurse can treat the patient with acupressure or teach the patient or family members how to use acupressure as part of a care plan.

Prior to touching any patient, the nurse must assess the readiness of the client .Shames and Keegan recommended the following assessment of clients:

- Perception of mind body situation
- Path physiological problems that may require referral
- History of psychological disorders
- Cultural beliefs about touch
- Previous experience with body therapies

Each point is located using an anatomical marker .There are many books describing point location .The standard measure is the t-sun, which is different for each individual .One t-sun for a particular patient is defined as the “width of the interphalangeal joint of the patient’s thumb or as the distance between the two radial ends of the flexor creases of a flexed middle finger of the patient. Two t-sun is the width of the index finger, the middle finger and the ring finger.

**Mehta R.S.,(2007)**

### **Stimulating the point**

There are several different types of techniques to stimulate the points, according to Gach:

- Firm stationary pressure using the thumbs ,fingers ,palms, the sides of hands or knuckles
- Slow motion kneading using the thumbs and fingers along with the heels of the hands to squeeze large muscle groups
- Brisk rubbing using friction to stimulate the blood and lymph
- Quick tapping with the fingertips to stimulate muscles on unprotected areas of the body such as the face

### **Evaluating acupressure’s effect**

The elements of the assessment include:

- Identifying the problems being addressed with acupressure
- Identifying the points being used for the treatment
- The length of time for the acupressure
- Identifying what makes the condition worse (e.g., standing, cold weather, menstruation, constipation, lack of exercise, stress traveling and others )

- Describing the changes experienced by the patient after 3 days and after 1 week of treatment
- Describing the changes in the condition and overall feeling of well-being

**Gach M .R.,(1990)**

### **Precautions**

- Never press any area in an abrupt, forceful, or jarring away. Apply finger pressure in a slow, rhythmic manner to enable layers of tissues and the internal organs to respond.
- Use abdominal points cautiously, especially if the patient is ill. Avoid the abdominal area altogether if the patient has a life threatening disease, especially intestinal cancer.
- Lymph areas such as the groin, the area of the throat just below the ears, and outer the breast near the armpits are very sensitive. Touch these areas very lightly.
- After acupressure treatment, tolerance to cold is lowered and the energy of the body is focused on healing, so advise the patient to wear warm clothes and keep out of drafts.
- Use acupressure cautiously in persons with a new acute or serious illness.
- Acupressure is not a sole treatment for cancer, contagious skin disease or sexually transmitted disease.
- Brisk rubbing, deep pressure or kneading should not be used for persons with heart disease, cancer or high blood pressure.

**Gach M .R.,(1990)**

## **PART- II**

### **A: Literatures related to quality of sleep among cancer patients**

**Fortner V.B., (2001)** conducted study on "sleep and quality of life among breast cancer patients" at United states. This study described sleep in a heterogeneous sample of breast cancer patients using the Pittsburgh Sleep Quality Index (PSQI) and examined the relation between sleep disturbance and health-related quality of life as measured by the Rand 36-Item Health Survey. Chemotherapy and radiation therapy were explored as predictors of sleep disturbance in breast cancer patients, and the sleep characteristics of breast cancer patients were compared to the sleep characteristics of a sample of medical patients with general medical conditions. Results showed that 61% of breast cancer patients had significant sleep problems. Sleep was characterized by reduced total sleep time with sleep frequently being disturbed by pain, nocturia feeling too hot, and coughing or snoring loudly. Despite the frequency of significant sleep disturbance, pharmacological and cognitive behavioral treatments of sleep problems were observed to be inadequate.

**Kvale E., (2005)** conducted study on "Anxiety and depression, common psychological responses to the diagnosis of cancer, cancer treatment and hospitalization". The findings are highly correlated with insomnia. The prevalence of cancer associated insomnia is the extremely broad range and it estimates about 19% - 95%.

**Engstrom .M.E.et. al., (2007)** reported the results of a telephonic survey of 150 patients with breast and lung cancer in various stages of treatment. 44% reported sleep disturbances in the month before the

interview which was not related to diagnosis, stage of disease or treatment modality.

**Mystakidou K.et.al., (2007)** conducted study on “The relationship of subjective sleep quality and quality of life among 102 Advanced cancer patients “at Athens. The result showed that mean global score of sleep quality was  $12.01 \pm 4.6$ . The use of the PSQI questionnaire in cancer patients demonstrated that these subjects were prone to poor sleep quality.

**Velamuri K., (2007)** conducted a descriptive study on “sleep disturbances among lung cancer patients” at Texas and found that Sleep disturbances are very common in cancer patients. They are part of a symptom cluster with fatigue and pain that greatly affect quality of life in these patients. Lung cancer patients are found to have the highest prevalence of sleep disturbances. However, these disturbances have not been as well-studied in the lung cancer patients. Though insomnia is the most common disorder seen in these patients, other sleep disorders like excessive daytime sleepiness, limb movement disorders and circadian rhythm disorders have also been described. Treatment of these disorders may affect the prognosis of patients with lung cancer. The highest rates of sleep disturbances are seen in hospitalized cancer patients and advanced cancer patients with prevalence rates as high as 67-72%.

**Palesh O .et.al., (2007)** conducted study on “prevalence and severity of sleep disturbance in 596 cancer patients” at University of Rochester and found that sleep disruption was reported by 31.9% (median =2;10.6% severe) at baseline, 77.2% (median =4;5% severe)

during treatment and 65.1% (median =2;15% severe) at 6 months post treatment. Repeated measures ANOVAs revealed statistically significant treatment group (chemotherapy, radiation or both ), age (less than 61 or more than 61 years) and gender by time interaction (all  $p < 0.05$ ). Sleep disturbance was significantly higher among survivors in two groups receiving chemotherapy younger survivors and women.

**Chen M. L., (2007)** conducted study on “sleep disturbances and quality of life in lung cancer patients undergoing chemotherapy” at Taiwan and the findings showed that patients mean PSQI global scores for days with chemotherapy ( $6.86 \pm 3.83$ ) and for days without chemotherapy ( $6.23 \pm 3.47$ ) were both higher than the cutoff of 5, indicating poor quality of sleep during the fourth cycle of chemotherapy.

**Rajashri M., (2009)** conducted study on “post surgery sleep apnea common among oro-pharyngeal cancer patients”. The pilot study, which collected data from 22 cancer patients in San Diego and found that 93% had obstructive sleep apnea with 67% defined as experiencing moderate or severe obstructive sleep apnea. Furthermore, 100% of those treated with radiation or chemotherapy developed obstructive sleep apnea, although only one-third of these patients had moderate or severe obstructive sleep apnea.

**Davis J.E., (2010)** conducted study on “A comparison of disrupted sleep patterns in women with cancer-related fatigue and postmenopausal women without cancer” at United states in which the global sleep quality and state anxiety were self-reported by 30 fatigued female breast cancer chemotherapy outpatients using Pittsburgh Sleep

Quality Index (PSQI).Result showed that fatigued breast cancer patients showed significant sleep difficulties, characterized by prolonged sleep onset latency (M=54.3, SD±49.2min) and frequent nighttime awakenings, despite 40% of the patients using sleep medications three or more times a week.

**Shuman A.G et. al (2010)** conducted study on "predictors of poor sleep quality among head and neck cancer patients" at United states. The study results showed the both base lone (67.1%) and 1 year post diagnosis (69.3) sleep scores were slightly lower that population means (72) Multivariate analyses showed that pain, xerostomia, depression, presence of a tracheostomy tube co-morbidities and younger age were statistically predictors of poor sleep 1 year after diagnosis of head and week cancer ( $P<.05$ ).

Smoking, alcoholism and female sex were marginally significant ( $P<.09$ ) and type of treatment (Surgery, radiation and / or chemotherapy), primary tumor site and cancer stage were not significantly associated with 1 - year scores.

**Walker A.J., (2010)** conducted study on "Sleep quality and sleep hygiene behaviors of adolescents during chemotherapy". Subjects were 51 adolescents (10 to 19 years) receiving chemotherapy for cancer. A questionnaire was used to assess sleep patterns prior to the adolescent's cancer diagnosis, and a 7-day sleep diary was used to assess subjective sleep-wake activity during chemotherapy. Adolescents receiving chemotherapy reported significantly worse sleep quality and sleep hygiene behaviors than healthy adolescents. Sleep hygiene and

demographic variables accounted for 24% of the variance in sleep quality.

**Hanisch L.J., (2010)** conducted study on "Sleep and daily functioning during androgen deprivation therapy for prostate cancer" at United States. This study assessed sleep in 60 prostate cancer patients taking androgen deprivation therapy with wrist actigraphy and daily diaries for 7 days. On average, total sleep time was 5.9h (SD  $\pm 1.4$ ), and sleep efficiency was 75% (SD  $\pm 12.0$ ) as assessed by actigraphy. Subjects reported awakening, on average, 2.7 times per night, most commonly for nocturia and hot flashes.

**Berger A.M.,(2010)**,conducted study on "Fatigue and other variables during adjuvant chemotherapy for colon and rectal cancer" among 21 subjects at United States .The study findings showed that Sleep quality was poor the months prior to chemotherapy 1 and chemotherapy. Actigraphy data revealed disturbed sleep, low daytime activity, and impaired circadian activity rhythms during the first week after chemotherapy 1-3. Quality of sleep (QoS) ratings were similar to those in other cancer populations. Fatigue increased, and white blood cell counts decreased significantly over time.

**Palesh O.G., (2010)** conducted study on "Prevalence, demographics, and psychological associations of sleep disruption in patients with cancer: University of Rochester Cancer Center-Community Clinical Oncology Program" at United States among 823 patients with cancer receiving chemotherapy. During day 7 of cycle 1 of chemotherapy, 36.6% (n = 301) of the patients with cancer reported insomnia symptoms, and 43% (n = 362) met the diagnostic criteria for insomnia syndrome. Patients with cancer younger than 58 years were



significantly more likely to experience either symptoms of insomnia or insomnia syndrome ( $\chi^2 = 13.6$ ;  $P = .0002$ ). Patients with breast cancer had the highest number of overall insomnia complaints. A significant positive association was found between symptoms of insomnia during cycles 1 and 2 of chemotherapy ( $\chi^2 = .62$ ,  $P < .0001$ ), showing persistence of insomnia during the first two cycles of chemotherapy. Sixty percent of the patient sample reported that their insomnia symptoms remained unchanged from cycle 1 to cycle 2. Those with insomnia complaints had significantly more depression and fatigue than good sleepers (all  $P < .0001$ ).

**Qian W.et.al., (2010)** conducted study on "Sleep apnea in patients with oral cavity and oropharyngeal cancer after surgery and chemoradiation" to determine the point prevalence of sleep apnea in patients following oral and oropharyngeal cancer treatment at a major tertiary care referral center, Toronto among 24 patients. Eleven patients in the surgical group and three in the nonsurgical group had a respiratory disturbance index (RDI) greater than 15 (odds ratio = 5.5,  $P = 0.092$ ). Twelve patients in the surgical group and five in the nonsurgical group had significant oxygen desaturation during sleep hours (odds ratio = 3.3,  $P = 0.356$ ). There was no observed significant correlation between RDI and oxygen desaturation ( $r = 0.28$ ), nor was there any observed association between the RDI and ESS score ( $r = 0.18$ ).

**Eyigor S.,(2010)** conducted study on "Assessment of pain, fatigue, sleep and quality of life (QoL) in elderly hospitalized cancer patients" at Turkey among 53 middle-aged (between 18 and 50 years) hospitalized cancer patients and 47 elderly ( $> 60$  years) hospitalized cancer patients. The study results showed that there is a significant

relationship was observed in both age groups between the scores of pain, fatigue and sleep problems, and QoL ( $p < 0.05$ ). Elderly hospitalized cancer patients did not demonstrate a distinctive difference in terms of pain, sleep and QoL compared to the younger group. The relationship between pain, fatigue, sleep and QoL should be definitely kept in mind in clinical practice.

**Erickson J.M.,(2011)** ,conducted study on “Fatigue, sleep-wake disturbances, and quality of life in adolescents receiving chemotherapy” at United States. This study measured fatigue, sleep disturbances, and quality of life in 20 adolescents over 1 month while they were receiving chemotherapy. Adolescents experienced increased severity of fatigue and sleep disturbances during the week after treatment. Common sleep-wake problems included daytime sleepiness, decreased alertness, and poor sleep quality.

#### **B: Literatures related to quality of sleep and acupressure**

**Wang X.H et.al.,(2003)** conducted study on “Clinical observation on effect of auricular acupoint pressing in treating sleep apnea syndrome” at China. Total of Forty-five patients with SAS were randomly divided in to the AAP (auricular acupressure point) group (30 patients) and the control group (15 patients).Clinical symptoms were significantly alleviated in the AAP group after treatment, with improvement in various parameters monitored by PSG ( $P < 0.01$ ), showing significantly reduced AHI, AI and HI and increased mSaO<sub>2</sub> ( $P < 0.01$ ). While in the control group, no improvement was found either in clinical symptom or in PSG parameters ( $P > 0.05$ ). Comparison between the two groups showed significant difference ( $P < 0.01$ ).

**Tsay S.L et.al.,(2003)** conducted study on “Acupoints massage in improving the quality of sleep and quality of life in patients with end-stage renal disease” at Taiwan. The study was a randomized control trial. A total of 98 end-stage renal disease patients with sleep disturbances were randomly assigned into an acupressure group, a sham acupressure group, and a control group. Acupressure and sham acupressure group patients received acupoints or no acupoints massage three times a week during haemodialysis treatment for a total of 4 weeks. The results indicated significant differences between the acupressure group and the control group in Pittsburgh Sleep Quality Index subscale scores of subjective sleep quality, sleep duration, habitual sleep efficiency, sleep sufficiency, and global Pittsburgh Sleep Quality Index scores.

**Tsay S.L et.al.,(2004)** conducted study on “Acupressure and Transcutaneous Electrical Acupoint Stimulation in improving fatigue, sleep quality and depression in hemodialysis patients” at Taiwan. The study was a randomized controlled trial; 106 qualified hemodialysis patients were randomly assigned to acupressure, TEAS Transcutaneous Electrical Acupoint Stimulation (TEAS) or control groups. Patients in the acupressure and TEAS groups received 15 minutes of treatment 3 times a week for 1 month, whereas patients in the control group only received routine unit care. The results indicated that patients in the acupressure and TEAS groups had significantly lower levels of fatigue, a better sleep quality and less depressed moods compared with patients in the control group based upon the adjusted baseline differences.

**Sok S.R et.al., (2005)** conducted study on “Effects of auricular acupuncture on insomnia in Korean elderly” at Korea among 40 elderly who were 65 years and over. The experimental group had higher significant sleep scores than that of the control group ( $t=32.739$ ,  $p=.001$ ). The experimental group had higher significant self- satisfaction scores on sleep than that of the control group ( $t=30.049$ ,  $p=.001$ ).

**Reza H.,(2010)** conducted study on “The effect of acupressure on quality of sleep in Iranian elderly nursing home residents”. A randomized controlled clinical trial was conducted among 90 elderly, residing in a Nursing home. The Pittsburgh Sleep Quality index (PSQI) questionnaire was used as a screening tool to select 90 residents with moderate to marked sleep disturbances. The elders were randomly assigned to an acupressure group, a sham acupressure group and a control group by Balanced randomization method. There were significant differences between the acupressure group and the control group in subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency and sleep disturbance. But no significant differences were found in sleep indices between the sham acupressure group and the control group. Sleep log data showed a significant decrease in nocturnal awakenings in acupressure group compared to other two groups.

**Sun J.L., (2010)** conducted study on “Effectiveness of acupressure for residents of long-term care facilities with insomnia: a randomized controlled trial” at Taiwan. 50 residents with insomnia in long-term care facilities were enrolled in a randomized controlled trial, with 25 participants allocated to the experimental group and 25 participants to the control group. For a 5-week period, the experimental group

received standard acupressure on the HT-7 points of both wrists, whereas the control group received only light touch on the same places. Insomnia was measured with the Athens Insomnia Scale-Taiwan form (AIS-T). Participants' self-reported scores were done at baseline, during the 5-week period, and after intervention. The experimental group has significantly better scores on the AIS-T compared to the control group, not only during the intervention period, but also extending after intervention, as shown by generalized estimating equations ( $p < 0.05$ ).

**C : Literatures related to acupressure on improving quality of sleep among cancer patients**

**Ummareddy M.,(2005)** Conducted a study on “the effect of acupressure on quality of sleep among 50 cancer patients” at Vellore and the study results showed that there was a significant improvement in the overall quality of sleep 21 (84%) in the experimental group after acupressure than the control group .

**Malossitis A.et.al.,(2007)** conducted study on “the management of cancer related fatigue” among 47 patients with cancer under randomized control trial .The acupressure group (n=16) were taught to press the points and did so daily there after for two weeks .It was found that there is an significant improvements were found with regards to fatigue .The trial was methodologically feasible.

**Cerrone R., Giani L. et.al., (2008)** conducted study on “Efficacy of HT-7 point acupressure stimulation in the treatment of insomnia in cancer patients suffering from disorders other than cancer” at Italy The study enrolled 25 patients and the result is, an improvement in the

quality of sleep is achieved in 15/25 (65%) patients with a more evident efficacy in cancer patients (11/14) (79%) .

**Sturgeon M. et.al., (2008)** conducted study on "the quality of life among patients with breast cancer during treatment". A pilot study conducted for consecutive 3 weeks and during these period participants has experiences a reduction in Quality of life symptom concerns. Respondent's cumulative pre and post massage mean state of anxiety, sleep quality and quality of life / functioning showed significant improvement.

**Romanelli M.N., (2008)** conducted study on "Efficacy of wrists overnight compression (HT-7 point) on insomniacs". The study is conducted with 40 patients for 20 nights. Data obtained indicate that the device HT7 – Insomnia control is efficacious to ameliorate quality of sleep and reduce anxiety levels in insomniacs, at a higher extent than in the placebo group.

**Argash O. et.al.,(2008)** conducted a study on "Touching cancer shiatsu as complementary treatment to support cancer patients" and found that shiatsu offers cancer patients a non-pharmacologic method to relieve symptoms and improve quality of life throughout the course of illness. It indicates that acupressure is relatively effective and safe for common cancer related symptoms such as insomnia, nausea and vomiting.

#### **D: Literatures related to other complementary therapies and sleep**

**Carlson L.E.et.al., (2005)** conducted study on “Impact of mindfulness-based stress reduction (MBSR) on sleep, mood, stress and fatigue symptoms in cancer outpatients” at United States .This study examined the effects of an 8-week Mindfulness-Based Stress Reduction (MBSR) program on the sleep quality of a heterogeneous sample of 63 cancer patients. Overall sleep disturbance was significantly reduced ( $p < .001$ ) and participants reported that their sleep quality had improved ( $p .001$ ). There was also a significant reduction in stress ( $p < .001$ ), mood disturbance ( $p = .001$ ), and fatigue ( $p < .001$ ).

**Gooneratne N.S., (2008)** conducted study on “Complementary and alternative medicine for sleep disturbances in older adults” and found that Complementary and alternative medicines (CAM) are frequently used for the treatment of sleep disorders, but in many cases patients do not discuss these therapies directly with their health care provider. There is a growing body of well-designed clinical trials using CAM that have shown the following: (1) Melatonin is an effective agent for the treatment of circadian phase disorders that affect sleep; however, the role of melatonin in the treatment of primary or secondary insomnia is less well established. (2) Valerian has shown a benefit in some, but not all clinical trials. (3) Several other modalities, such as Tai Chi, acupuncture, acupressure, yoga, and meditation have improved sleep parameters in a limited number of early trials. Future work examining CAM has the potential to significantly add to our treatment options for sleep disorders in older adults.

**Cao H .et.al., (2009)** conducted study on “Acupuncture for treatment of insomnia: a systematic review of randomized controlled trials” at China in which Forty-six (46) randomized trials involving 3811 patients were included, and the methodological quality of trials was generally fair in terms of randomization, blinding, and intention-to-treat analysis. Meta-analyses showed a beneficial effect of acupuncture compared with no treatment (MD -3.28, 95% CI -6.10 to -0.46,  $p = 0.02$ ; 4 trials) and real acupressure compared with sham acupressure (MD -2.94, 95% CI -5.77 to -0.11,  $p = 0.04$ ; 2 trials) on total scores of Pittsburgh Sleep Quality Index. Acupuncture was superior to medications regarding the number of patients with total sleep duration increased for >3 hours (RR 1.53, 95% CI 1.24-1.88,  $p < 0.0001$ ). However, there was no difference between acupuncture and medications in average sleep duration (MD -0.06, 95% CI -0.30-0.18,  $p = 0.63$ ). Acupuncture plus medications showed better effect than medications alone on total sleep duration (MD 1.09, 95% CI 0.56-1.61,  $p < 0.0001$ ). Similarly, acupuncture plus herbs was significantly better than herbs alone on increase of sleep rates (RR 1.67, 95% CI 1.12-2.50,  $p = 0.01$ ). There were no serious adverse effects with related to acupuncture treatment in the included trials.

**Demiralp M.et.al., (2010)** conducted study on “Effects of relaxation training on sleep quality and fatigue in patients with breast cancer undergoing adjuvant chemotherapy” at Turkey. The study sampling consisted of 27 individuals (14 individuals formed the progressive muscle relaxation group, 13 individuals formed the control group. The progressive muscle relaxation group experienced a greater increase in improved sleep quality and a greater decrease in fatigue than the control group.



**Kwekkeboom K.L et.al., (2010)** conducted study on “Feasibility of a patient-controlled cognitive-behavioral intervention for pain, fatigue, and sleep disturbance in cancer ”at United States among 30 adults with advanced (recurrent or metastatic) colorectal, lung, prostate, or gynecologic cancer receiving chemotherapy or radiotherapy. Participants received education and training to use an MP3 player loaded with 12 cognitive-behavioral strategies (e.g., relaxation exercises, guided imagery, nature sound recordings). The findings showed that they enjoyed the intervention, had learned useful skills, and perceived improvement in their symptoms; however, significant reductions in pain, fatigue, and sleep disturbance severity were found in ratings made immediately before and after use of a cognitive-behavioral strategy.

**Yang H.L.,(2010)** conducted study on “The effects of warm-water footbath on relieving fatigue and insomnia of the gynecologic cancer patients on chemotherapy” in Taiwan. There were 25 and 18 participants in the comparison and experimental groups, respectively. Participants in the experimental group soaked their feet in 41°C to 42°C warm water for 20 minutes every evening, starting from the eve of receiving the first chemotherapy, whereas participants in the comparison group did not do so. Participants in the experimental group reported a significant reduction in fatigue and improvement in sleep quality from the second session of chemotherapy and continued to improve during the study period.

**Chandwani K.D., (2010)** conducted study on "Yoga improves quality of life and benefit finding in women undergoing radiotherapy for breast cancer" at Taiwan . Sixty-one women were randomly assigned to either a yoga or a wait-list group. Yoga classes were taught biweekly during the 6 weeks of radiotherapy. General linear model analyses revealed that compared to the control group, the yoga group reported significantly better general health perception ( $p = .005$ ) and physical functioning scores ( $p = .04$ ) 1 week post radiotherapy; higher levels of intrusive thoughts 1 month post radiotherapy ( $p = .01$ ); and greater benefit finding 3 months post radiotherapy ( $p = .01$ ). Exploratory analyses indicated that intrusive thoughts 1 month after radiotherapy were significantly positively correlated with benefit finding 3 months after radiotherapy ( $r = .36, p = .011$ ). Results indicated that the yoga program was associated with statistically and clinically significant improvements in aspects of QOL.

## **CHAPTER – III**

### **METHODOLOGY**

The chapter deals with the methodology adopted for this study. It includes the research approach, research design, setting of the study, criteria for sample selection, sampling technique, sample size, instrument, method of data collection, scoring procedure and data analysis.

#### **RESEARCH APPROACH:**

The evaluative approach was used to evaluate the effectiveness of acupressure on improving the quality of sleep among cancer patients.

#### **RESEARCH DESIGN**

The research design used in this study was pre-experimental (one group pre test- post test) design.

<b>Group I</b>	<b>PRETEST</b>	<b>INTERVENTION</b>	<b>POST TEST</b>
	O <sub>1</sub>	X	O <sub>2</sub>

O<sub>1</sub>: Collection of demographic data, assessment of quality of sleep among cancer patients before intervention.

X: Applying acupressure to improve the quality of sleep among cancer patients.

O<sub>2</sub>: Assessment of quality of sleep among cancer patients after intervention.

## **SETTING OF THE STUDY**

The study was conducted in Health Care Globus (H.C.G), Cancer center at Erode which is 40 bedded unit and it is paired with 3 storied Senthil Neuro –Multi speciality hospital which is 350 bedded hospital. H.C.G. cancer center consists of male and female general ward and private rooms. There is a separate radiation therapy unit in the ground floor and out-patient department were 60-70 patients /day is receiving radiation therapy. H.C.G cancer unit has the inpatient ratio of 30-33 patients /month which admits the patients who receives radiation therapy chemotherapy and surgery. Hospital stay for patient is based on the type of treatment. Patient who receives radiation therapy stays for minimum of 23 days and chemotherapy patients stays about 8-9 days and surgical patients requires at least 10 days of hospital stay.

## **POPULATION**

Patients with any type of cancer were selected for this study.

## **SAMPLE**

Cancer patients who have sleep disturbances and the pre test scores of Pittsburg Sleep Quality Index (PSQI) scale is more than 5 were the samples.

## **CRITERIA FOR SAMPLE SELECTION**

### **Inclusion Criteria**

- ❖ Patients between 35- 50yrs of age.
- ❖ Patients who stays in the hospital for 8-10 days.
- ❖ Both male and female patients receiving radiation therapy chemotherapy and surgery patients.

### **Exclusion Criteria**

- ❖ Patients who are critically ill.
- ❖ Patients who had undergone surgery and on drugs for sleep.
- ❖ Patients who are not willing to participate.

### **SAMPLE SIZE**

A sample of 60 cancer patients who met the inclusion criteria were selected for the study.

### **SAMPLING TECHNIQUE**

Non Probability purposive sampling method was used to select the samples for the study.

### **INSTRUMENT AND SCORING PROCEDURE**

#### **DESCRIPTION OF THE INSTRUMENT**

The instrument consists of 2 parts.

#### **PART - I**

The demographic variables of cancer patients were age, sex, educational status, religion, occupational status, family income, marital status, duration of illness and type of treatment.

#### **PART - II PITTSBURG SLEEP QUALITY INDEX SCALE (PSQI)**

The quality of sleep was assessed by using Pittsburg sleep quality index scale which was adopted from Buysee, D.J.et.al (1989).

It consists of 19 items to assess 7 components of sleep, sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications and daytime dysfunction.

### **PART - III SLEEP DIARY**

Sleep diary is formulated by National sleep foundation (2002) which consists of 15 questions. It summarizes the information about sleep wakefulness patterns, indicating activities and behaviors that affect the quality and quantity of sleep. Sleep diary findings were used to score the component of sleep during post test.

### **SCORING PROCEDURE AND INTERPRETATION**

#### **PART - II PITTSBURG SLEEP QUALITY INDEX SCALE (PSQI)**

Each component were assessed as follows

- 0 - Very good sleep
- 1 - Fairly good sleep
- 2 - Fairly bad sleep
- 3 - Very bad sleep

All the scores of 7 components were added and the total score was assessed as below

<b>Level of sleep</b>	<b>Scores</b>	<b>Percentage</b>
a. Good sleep	0-7	0-33%
b. Fairly good sleep	8-14	34-66%
c. Poor sleep	15-21	67-100%

### **VALIDITY**

The validity of the tool was established in consultation with guide and experts in the field of nursing and medicine. There were no changes has been made in the standardized tool.

## **RELIABILITY**

The reliability of the Pittsburg Sleep Quality Index Scale was established by inter-rater reliability method and Karl Pearson formula was used to find the consistency of the tool and found to be reliable ( $r = 0.87$ )

## **PILOT STUDY**

The pilot study was conducted for a period of eight days in Erode Cancer Center at Erode. The permission was obtained from the Administrator, Manager and Nursing service. The number of samples for the pilot study was six. Patients were selected who satisfy the inclusion criteria by using non probability purposive sampling technique. The researcher introduced about the study to the subjects and established rapport with them and demographic variables were collected and patient's quality of sleep was assessed by PSQI scale in pretest and acupressure was given before bedtime for about 9 minutes (3 min/acupoint) to induce sleep. The purpose of sleep diary has been explained and it was maintained by the investigator from the very next morning for seven days. This acupressure therapy was continued once in a day for seven days before bed time. Post test was assessed on the 8<sup>th</sup> day morning using the PSQI scale. Acupressure self instructional module was given after post test to make use of acupressure at home setting. The mean scores of quality of sleep among cancer patients before and after intervention were 139.33 ( $SD \pm 1.8$ ) and 12 ( $SD \pm 1$ ) respectively and it represents the scores of sleep after intervention were significantly lower than the scores of sleep before intervention. The "t" value is 25.12 (2.571) which was significant at 0.05 level. This findings showed that the study is feasible and practicable to conduct the main study.

## DATA COLLECTION PROCEDURE

The main study was conducted in H.C.G Cancer Center at Erode. The permission was obtained from the Administrator, Central manager and Nursing service. The number of samples for the main study was 60. Patients were selected who satisfy the inclusion criteria by using non probability purposive sampling technique. The researcher introduced about the study to the subjects and established rapport with them and demographic variables were collected and patient's quality of sleep was assessed by PSQI scale in pretest and acupressure was given at bedtime for about 9 minutes (3min/acupoint) in the HT-7shenmen wrist point, SP-6 sanjinijiao base of calf muscle and Animan I and II back of the ear to induce sleep. 13-14 patients were assessed per week .The purpose of sleep diary has been explained and it was maintained by the investigator from the very next morning for 7 days. This acupressure therapy was given once in a day before bedtime for seven days. Post test was assessed on the 8<sup>th</sup> day morning using the PSQI scale.

Acupressure self instructional module was given after post test to make use of acupressure at home setting. The data were tabulated and analyzed and the effectiveness was evaluated by using descriptive and inferential statistics.



## DATA ANALYSIS

Sl. No	Data analysis	Method	Purpose
1.	Descriptive statistics	Frequency, Percentage.  Mean and standard deviation.	To describe the demographic variables.  To assess the quality of sleep among cancer patients after intervention.
2.	Inferential statistics	Paired 't' test  "Chi square" test	To evaluate the effectiveness of quality of sleep among cancer patients after acupressure.  To find the association between the quality of sleep after acupressure among cancer patients with their selected demographic variables.

## PROTECTION OF HUMAN SUBJECTS

The study was conducted after the approval of dissertation committee prior to conduct the pilot study and main study. Written permission was obtained from the administrator, Manager and Nursing service of H.C.G Cancer center at Erode. Oral permission was obtained from each selected sample. It was assured that confidentiality will be maintained throughout the study.

## **CHAPTER- IV**

### **DATA ANALYSIS AND INTERPRETATION**

This chapter deals with the analysis and interpretation of data collected to assess the effectiveness of acupressure on improving the quality of sleep among cancer patients.

The data were obtained from 60 cancer patients at H.C.G. cancer center, Erode.

The data obtained were analyzed and presented under the following headings:

The data has been organized and tabulated as follows

**Section A :** Distribution of Demographic variables.

**Section B :** Assess the quality of sleep before intervention.

**Section C :** Assess the quality of sleep after intervention.

**Section D:** Comparison of quality of sleep before and after intervention.

**Section E :** Assess the effectiveness of acupressure among cancer patients after intervention.

**Section F :** Association between the quality of sleep among cancer patients after intervention with their selected demographic variables .

## Section – A: DISTRIBUTION OF DEMOGRAPHIC VARIABLES

**Table 1:** Frequency and Percentage distribution of Demographic variables of cancer patients

n= 60

Sl. No	Demographic Variables	Frequency	Percentage
<b>1</b>	<b>Age</b>		
	a. 35-40 years	8	13.33
	b. 41-45 years	12	20
	c. 46-50 years	40	66.67
<b>2</b>	<b>Sex</b>		
	a. Male	25	41.67
	b. Female	35	58.33
<b>3</b>	<b>Educational status</b>		
	a. No formal education	32	53.33
	b. Primary education	20	33.34
	c. High school	4	6.67
	d. Higher Secondary	2	3.33
	e. Degree	2	3.33
<b>4</b>	<b>Marital Status</b>		
	a. Single	3	5
	b. Married	53	88.33
	c. Widow	4	6.67

<b>Sl. No</b>	<b>Demographic Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>5</b>	<b>Occupational Status</b>		
	a. Government employee	3	5
	b. Private employee	3	5
	c. Self employee	30	50
	d. Unemployed	24	40
<b>6</b>	<b>Religion</b>		
	a. Hindu	54	90
	b. Christian	2	3.33
	c. Muslim	4	6.67
<b>7</b>	<b>Family Income</b>		
	a. Rs. 1000-Rs.3000	44	73.33
	b. Rs.3001-Rs.6000	13	21.67
	c. Above Rs. 6000	3	5
<b>8</b>	<b>Duration of Illness</b>		
	a. Less than one year	48	80
	b. 1-3 years	11	18.33
	c. 3-5 years	1	1.67
<b>9</b>	<b>Type of treatment</b>		
	a. Radiation therapy	9	15
	b. Chemotherapy	38	63.33
	c. Surgery	13	21.67

The above table (1) showed distribution of cancer patients according to their age group depicts that the highest percentage 40 (66.67%) of patients belonged to the age group of 46-50 years; 8 (13.33%) were in the age group of 35-40 years, 12 (20%) were in the age group of 41-45 years. It shows that most of the patients were between 46-50 years of age. (Fig.1).

Percentage wise distribution of cancer patients according to their sex reveals the higher percentage 35 (58.33%) were females when compared to males 25 (41.67%). Females are more affected than Males. (Fig.2)

Distribution of cancer patients according to their educational status depicts that 32 (53.33%) had no formal education, 20 (33.34%) of cancer patients had primary education, 4 (6.67%) of cancer patients with high school education and 2 (3.33%) of cancer patients had higher secondary education and 2 (3.33%) of cancer patients had studied degree (Fig.3).

The data showed that most of the patients 53 (88.33%) were married, 4 (6.67%) were single and only 3 (5%) were widower/widow (Fig.4).

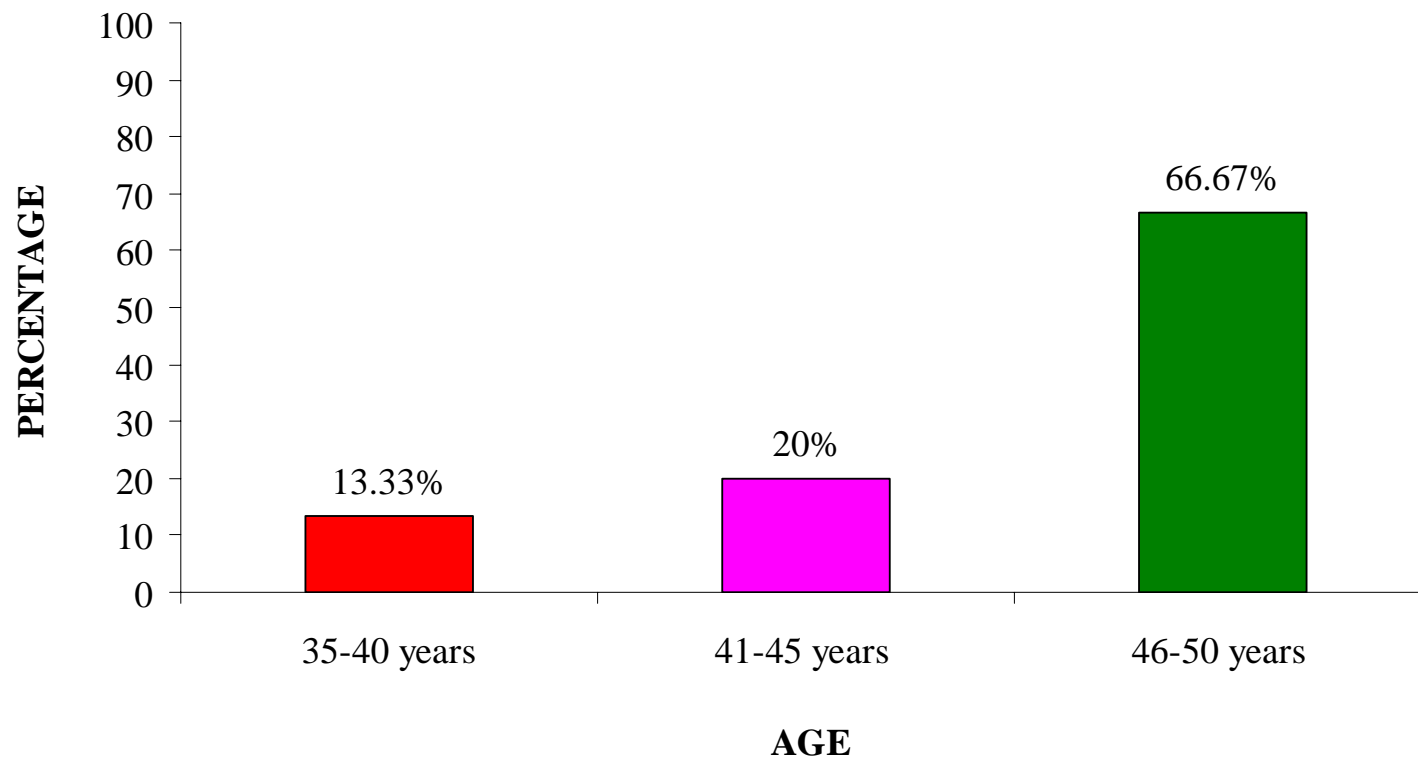
With regard to the occupation, only 3 (5%) were government employee and 3 (5%) were private employee and majority of cancer patients that is 30 (50%) were self employee and 24 (40%) were unemployed (Fig.5).

Among 60 cancer patients 54 (90%) cancer patients were Hindu and only 2 (3.33%) were Christian and 4 (6.67%) were Muslim (Fig.6).

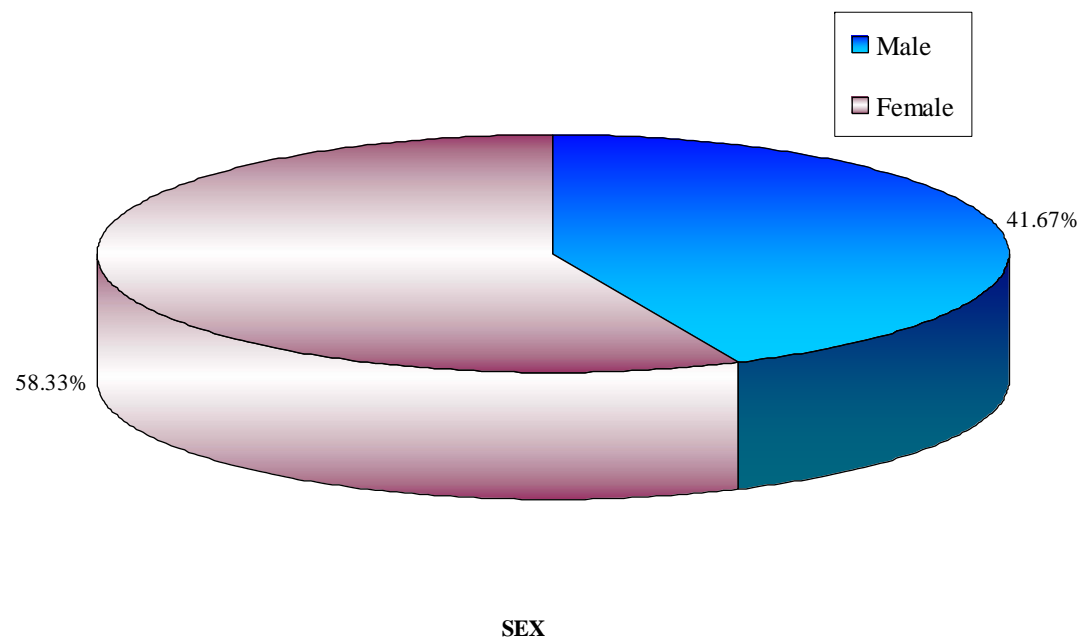
In relation to family income, 44 (73.33%) were in the income group of between Rs.1000-Rs.3000 and 13 (21.67%) were in the income group of Rs. 3001-Rs. 6000 and only 3 (5%) had family income of above Rs. 6000 (Fig.7).

According to the distribution of cancer patients on the basis of duration of illness majority 48(80%) were suffering from cancer for less than one year duration, only 11(18.33%) were had 1-3 years duration of illness and only 1(1.67%) had 3-5 years of illness. (Fig.8).

With regard to type of treatment 9 (15%) of cancer patients receives radiation therapy and about 38 (63.33%) of cancer patients receives chemotherapy and 13 (21.67%) were surgery patients. (Fig.9).

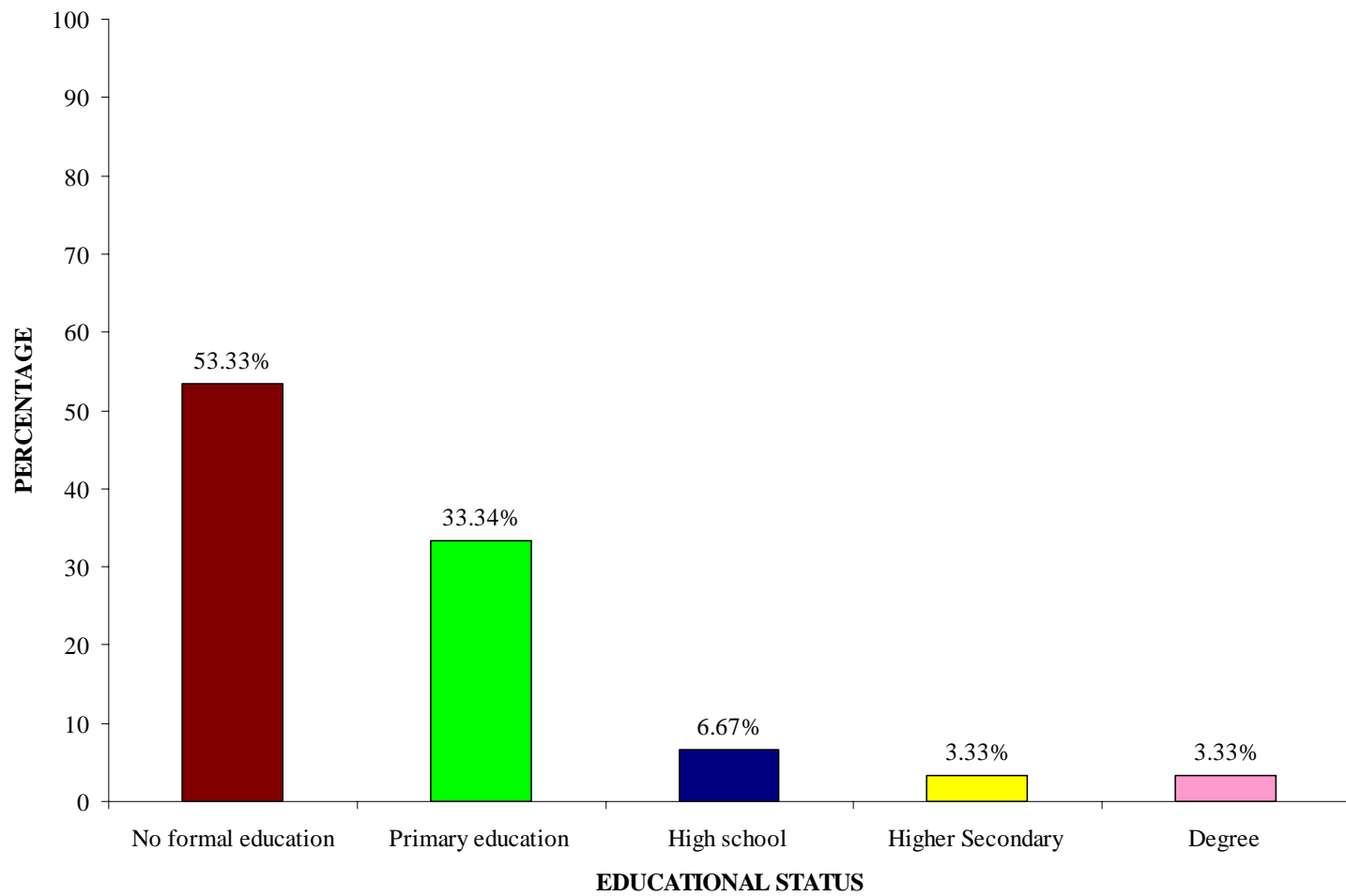


**Fig 2: Percentage distribution of cancer patients according to their Age**

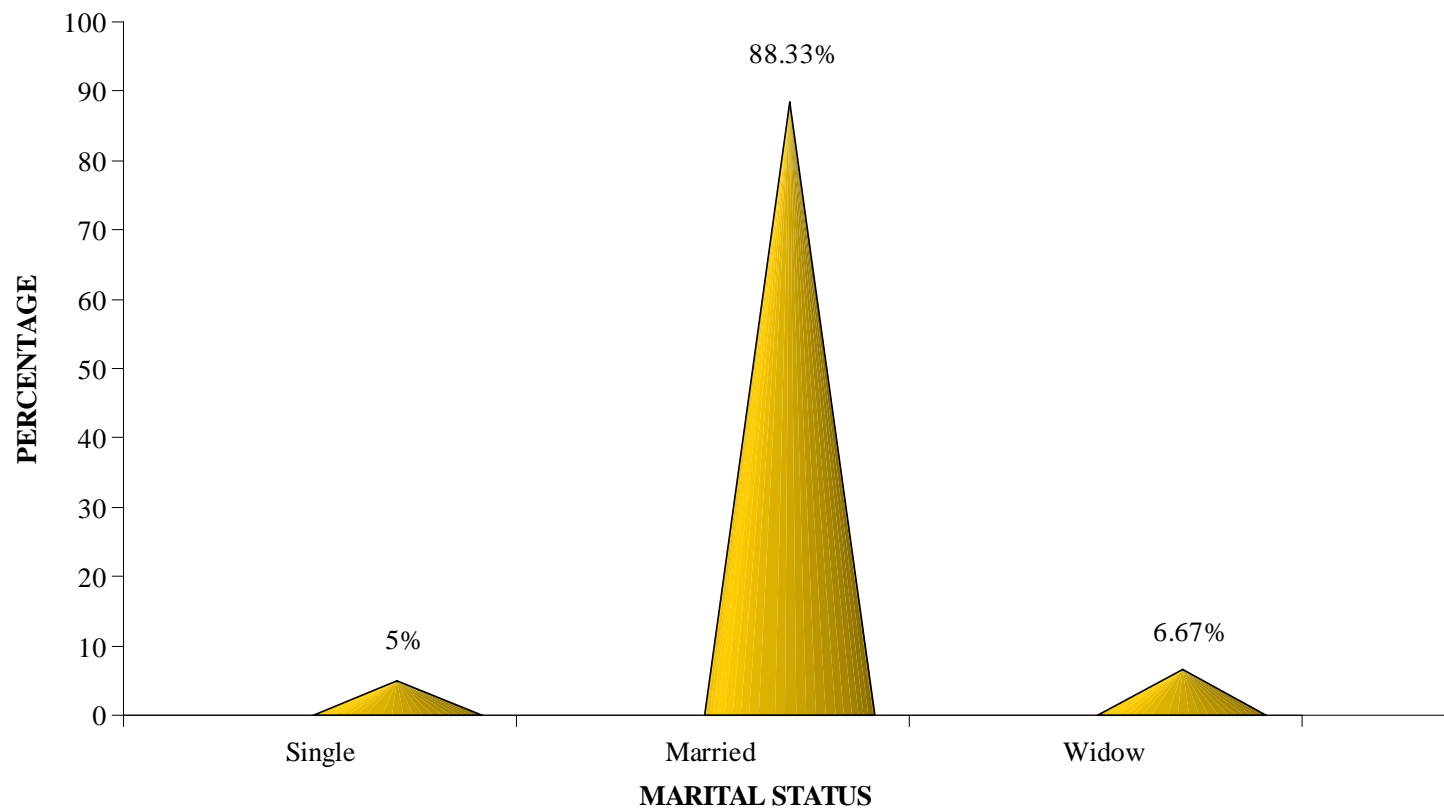


**Fig: 3 Percentage distribution of cancer patients according to their Sex.**

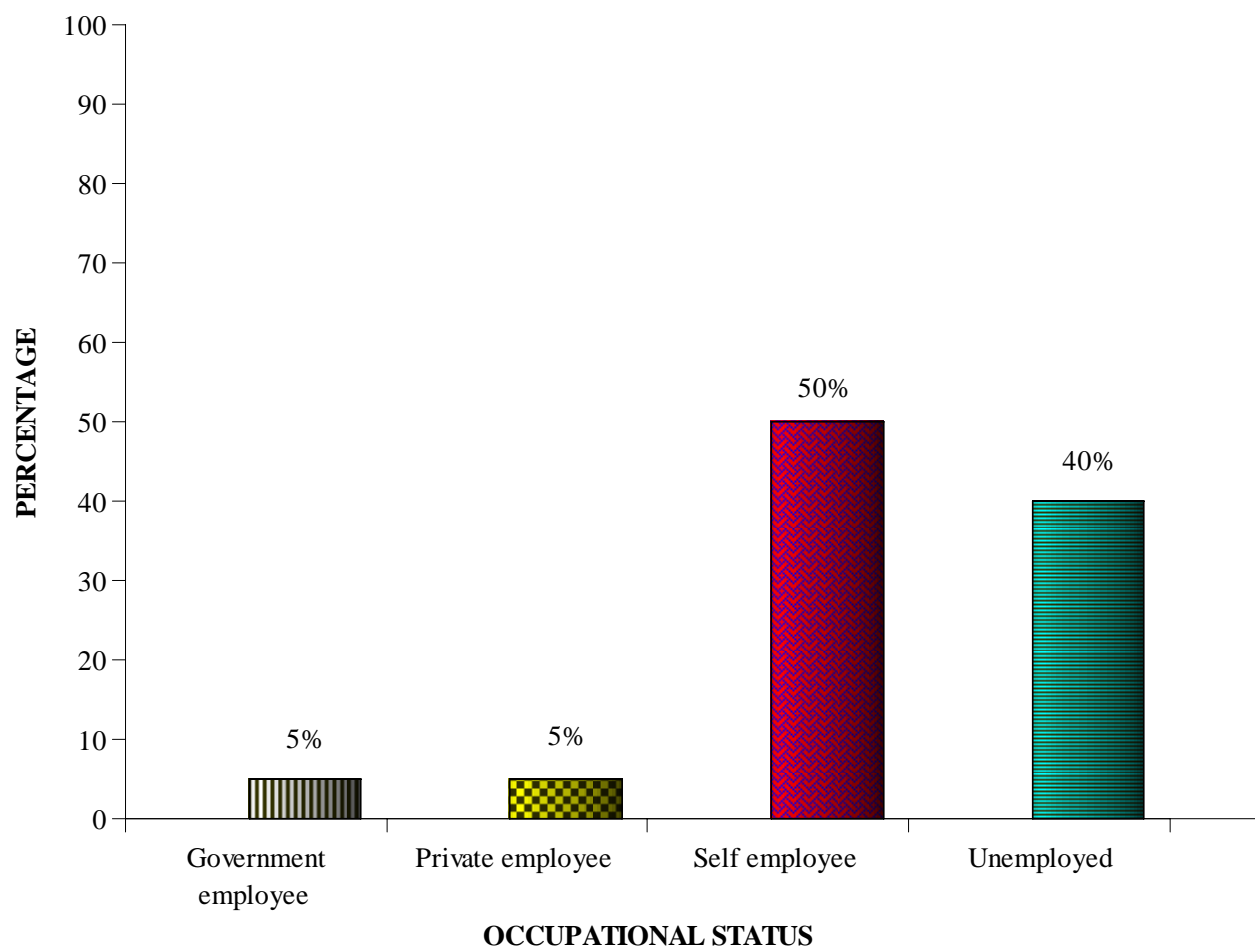




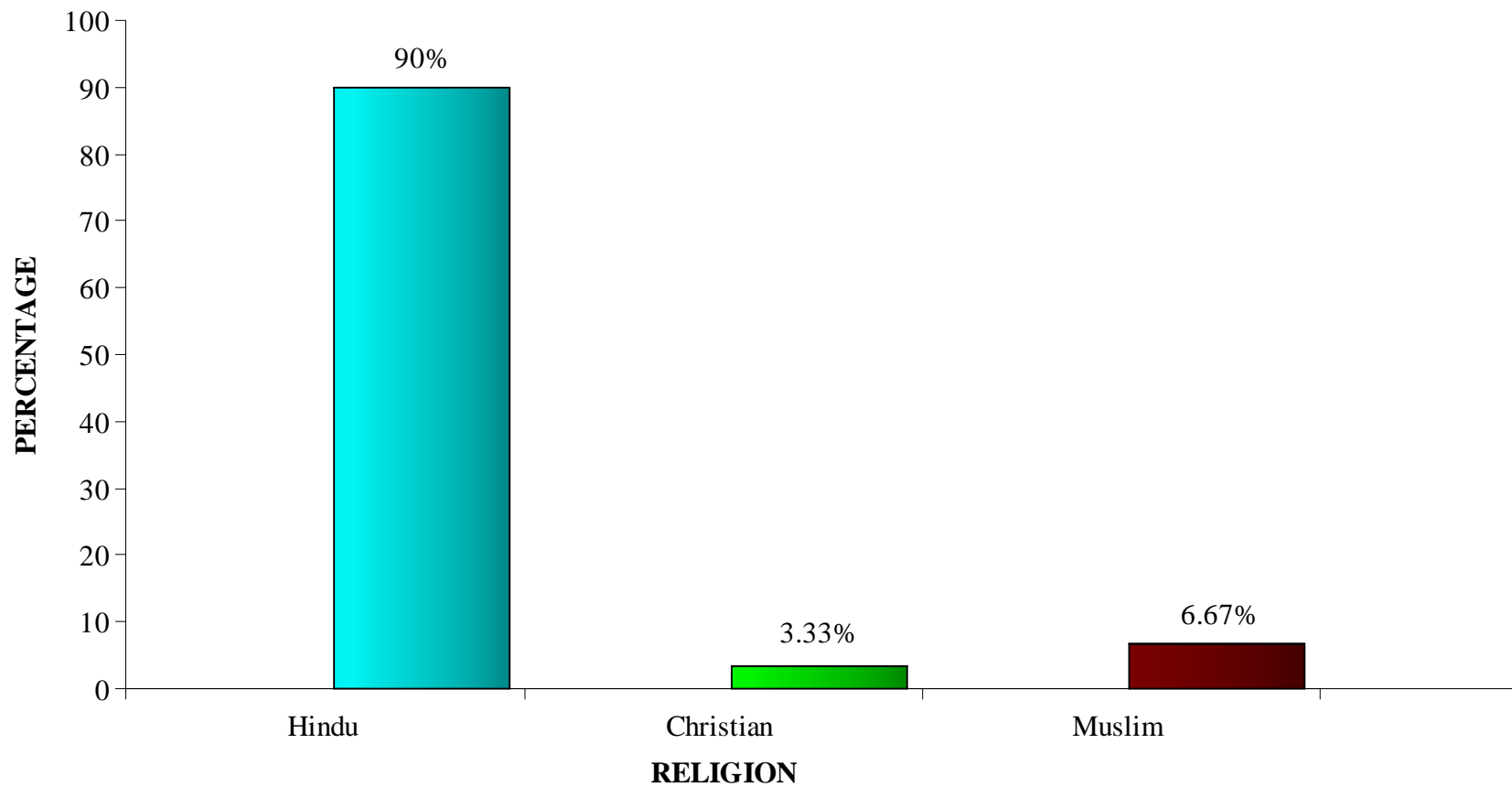
**Fig: 4 Percentage distribution of cancer patients according to their educational status**



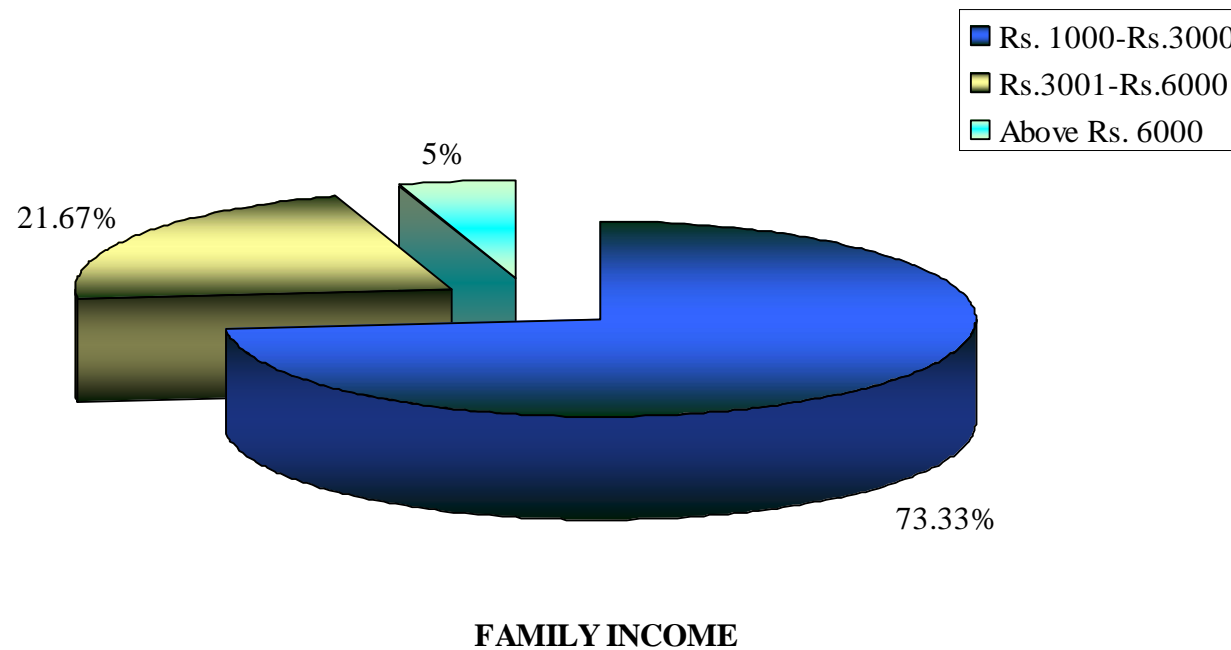
**Fig: 5 Percentage distribution of cancer patients according to their marital status**



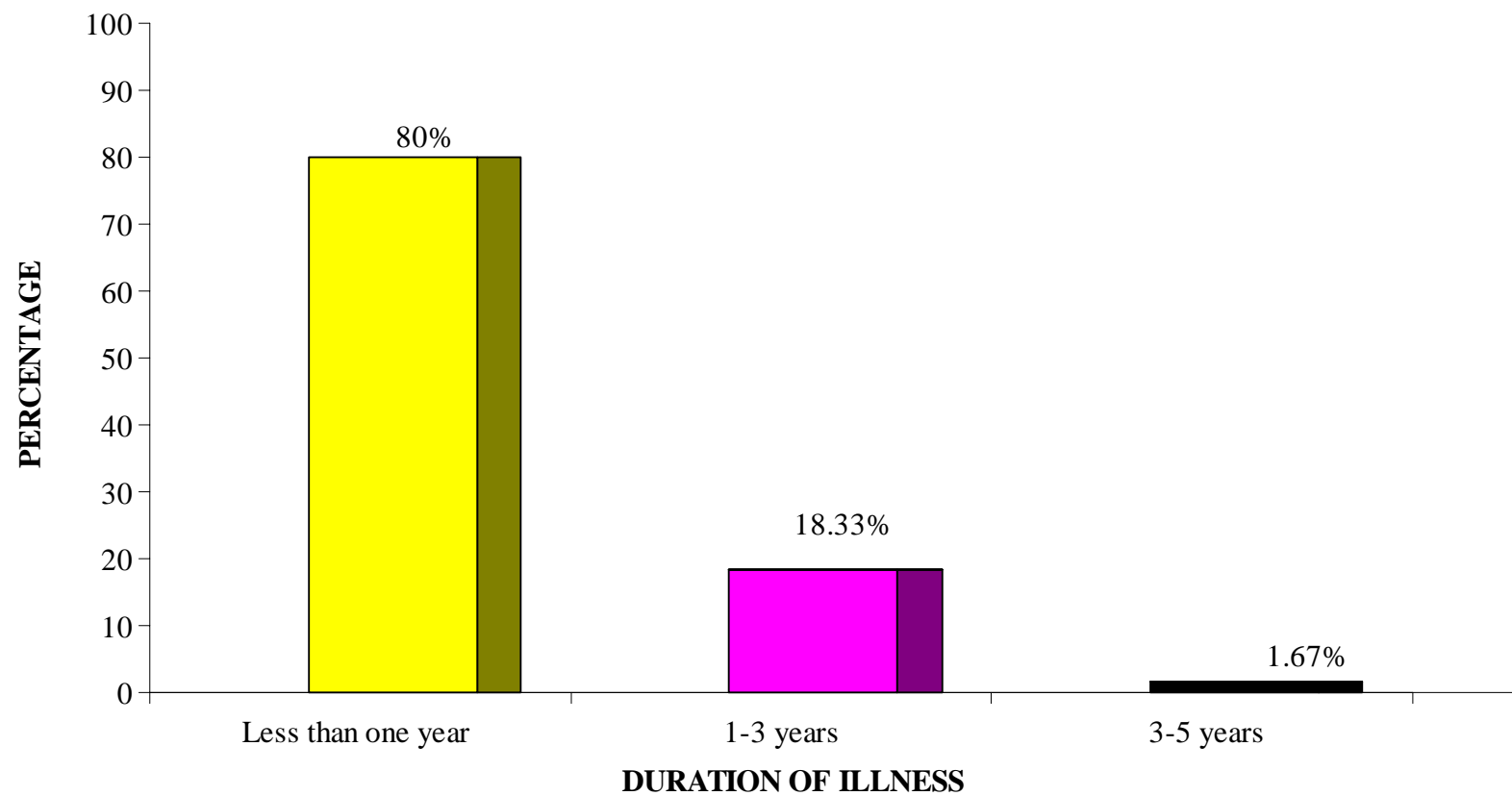
**Fig: 6 Percentage distribution of cancer patients according to their occupational status**



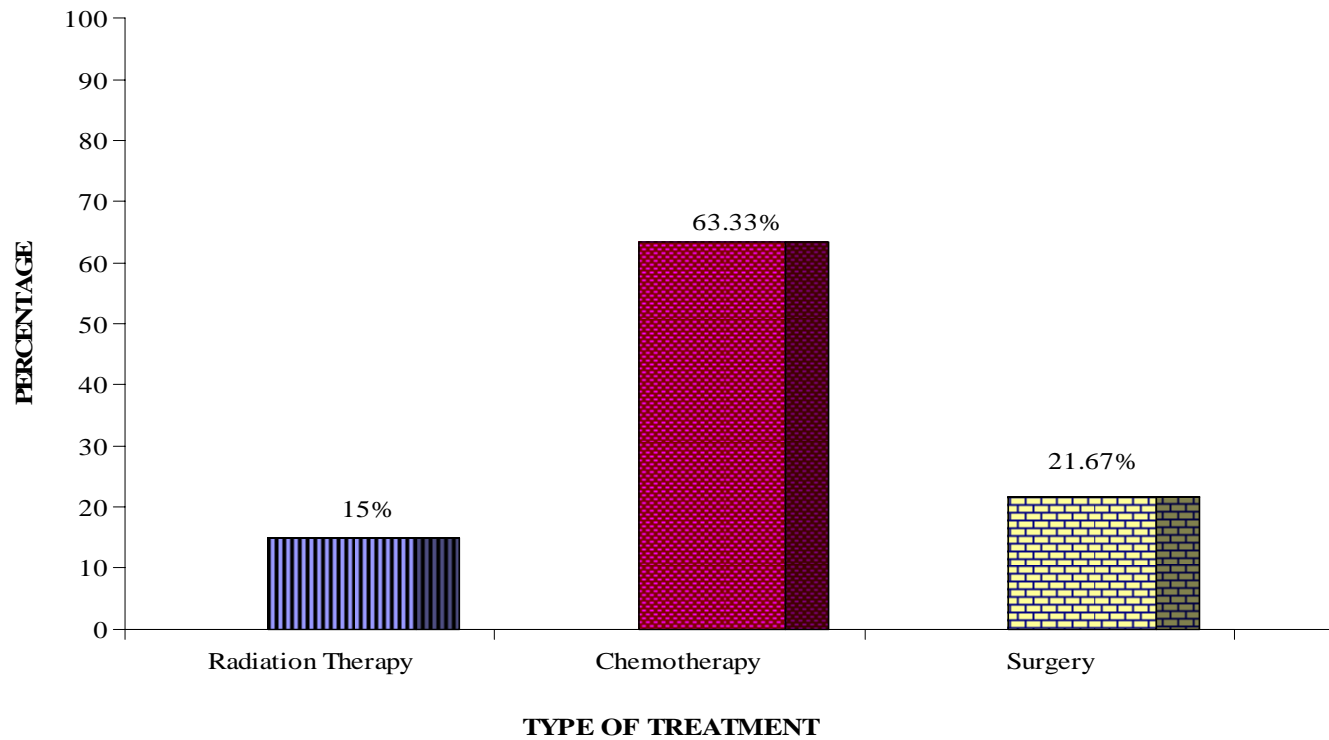
**Fig: 7 Percentage distribution of cancer patients according to their Religion**



**Fig:8 Percentage distribution of cancer patients according to their family income**



**Fig:9 Percentage distribution of cancer patients according to their duration of illness**



**Fig:10 Percentage distribution of cancer patients according to their type of Treatment**

## SECTION- B: Assess the quality of sleep before intervention

**Table (2) :** Frequency and percentage distribution of quality of sleep among Cancer patients before intervention

n=60

Quality of Sleep	Before intervention	
	Frequency	%
Good sleep	7	11.67
Fairly good Sleep	46	76.66
Poor sleep	7	11.67

Table (2) showed that among 60 cancer patients, 7 (11.67%) of cancer patients had good sleep, 46 (76.66%) of cancer patients had fairly good sleep and 7 (11.67%) had poor sleep before intervention.



### SECTION- C: Assess the quality of sleep after intervention

**Table (3) :** Frequency and percentage distribution of quality of sleep among cancer patients after intervention

n=60

Quality of Sleep	Before intervention	
	Frequency	%
Good sleep	50	83.33
Fairly good Sleep	10	16.67
Poor sleep	0	-

Table (2) showed that among 60 cancer patients, 50 (83.33%) of cancer patients had good sleep, 10 (16.67%) of cancer patients had fairly good sleep after intervention.

**SECTION- D:     Assess the quality of sleep before and after intervention**

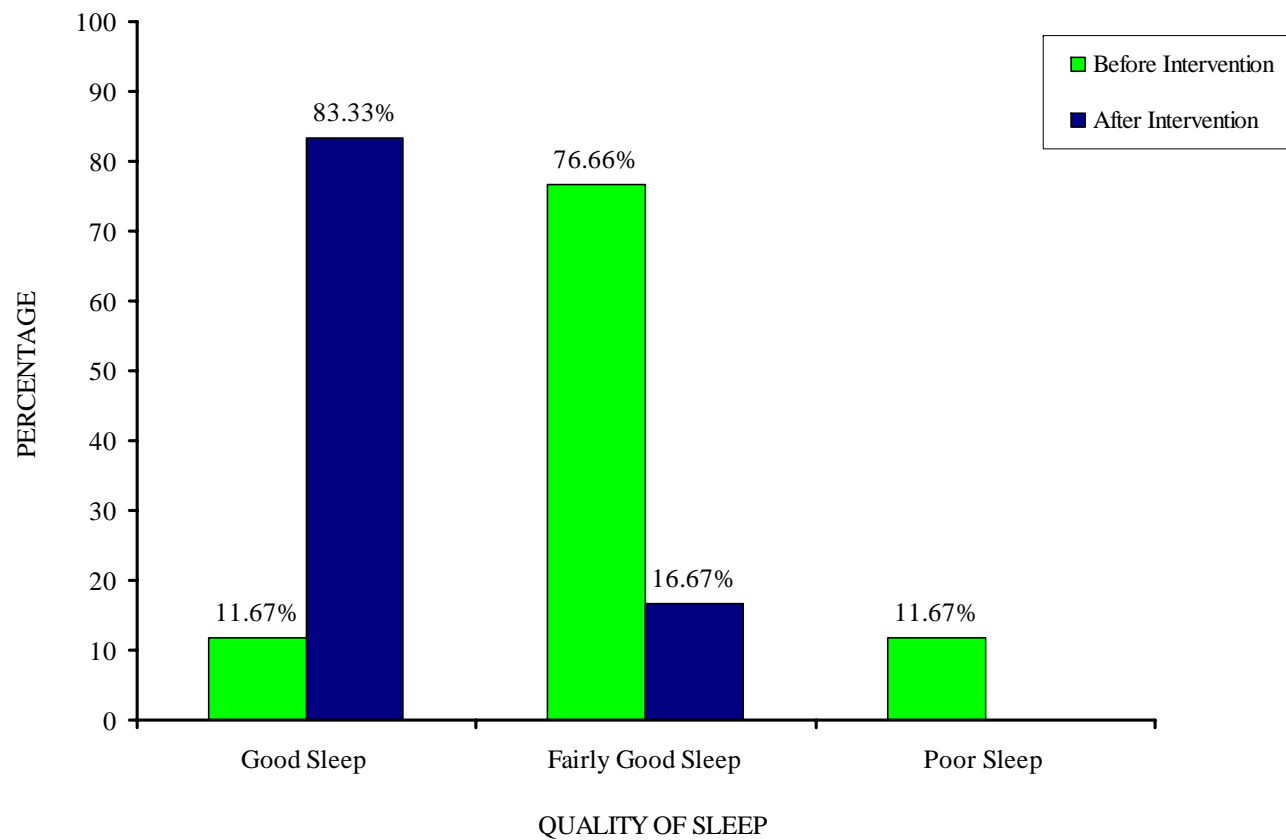
**Table (4) :**        Frequency and percentage distribution of quality of sleep among Cancer patients before and after intervention

n=60

Quality of sleep	Before intervention		After intervention	
	Frequency	Percentage	Frequency	Percentage
Good sleep	7	11.67	50	83.33
Fairly Good sleep	46	76.66	10	16.67
Poor sleep	7	11.67	0	-

Tab (4) showed that among 60 cancer patients, 7 (11.67%) of cancer patients had good sleep, 46 (76.66%) of cancer patients had fairly good sleep and 7(11.67%) had poor sleep before intervention.

Among 60 cancer patients, majority 50 (83.33%) had good sleep and 10 (16.67%) of cancer patients had fairly good sleep after intervention.



**Fig: 11 Percentage distribution of quality of sleep among cancer patients before and after intervention**

**SECTION- E: Assess the effectiveness of acupressure among  
Cancer patients after intervention**

**Tab (5): Comparison of mean, standard deviation and “t” test value before and after intervention**

n=60

Sl. No	Variable	Mean	Standard deviation	Mean Difference	Paired 't' test value	Table value	Remarks
1	Before Intervention	138.16	3.23	107.65	23.06	1.960	significant
2	After Intervention	30.51	2.30				

df = 59

(P<0.05)

Table (5) showed that the mean scores of quality of sleep among cancer patients before and after intervention were 138.16 (SD  $\pm$  3.23) and 30.51 (SD  $\pm$  2.32) respectively and it represents the scores of sleep after intervention were significantly lower than the score of sleep before intervention and the mean difference is 107.65. The “t” value is 23.06 (1.960) which was significant at 0.05 level.

**SECTION :F      To find the association between the quality of sleep after intervention among cancer patients with their selected demographic variables**

**Tab (6) :      Association between the quality of sleep after acupressure among cancer patients with their selected demographic variables**

n=60

Sl. No	Demographic Variables	Quality of sleep						$\chi^2$	Table Value	Significance
		Good Sleep		Fairly Good Sleep		Poor Sleep				
		No	%	No	%	No	%			
1	Age									
	a. 35-40 years	7	11.66	1	1.67	0	-	4.14		
	b. 41-45 years	12	20	0	-	0	-	(df=4)	9.48	NS
	c. 46-50 years	31	51.66	9	15	0	-			
2	Sex									
	a. Male	22	36.66	3	5	0	-	0.65	5.99	NS
	b. Female	28	46.66	7	11.66	0	-	(df=2)		
3	Educational status									
	a. No formal education	25	41.66	7	11.66	0	-			
	b. Primary education	17	28.33	3	5	0	-			
	c. High school	4	6.67	0	-	0	-	24.67	12.59	S
	d. Higher secondary	2	3.33	0	-	0	-	(df=6)		
	e. Degree	2	3.33	0	-	0	-			

Sl. No	Demographic Variables	Quality of sleep						$\chi^2$	Table Value	Significance
		Good Sleep		Fairly Good Sleep		Poor Sleep				
		No	%	No	%	No	%			
4	Marital status							14.18 (df=6)	12.59	NS
	a. Single	3	5	0	-	0	-			
	b. Married	45	75	8	13.3	0	-			
	c. Widow	2	3.32	2	3.33	0	-			
	d. Divorced	0	-	0	-	0	-			
5	Occupational status							3.04 (df=6)	12.59	NS
	a. Government employee	3	5	0	-	0	-			
	b. Private employee	3	5	0	-	0	-			
	c. Self employee	24	40	6	10	0	-			
	d. Unemployed	20	33.32	4	6.66	0	-			
6	Religion							2.21 (df=6)	12.59	NS
	a. Hindu	45	75	9	15	0	-			
	b. Christian	2	3.32	0	-	0	-			
	c. Muslim	3	5	1	1.66	0	-			
	d. Others	0	-	0	-	0	-			
7	Family income							2.69 (df=4)	9.48	NS
	a. Rs.1000- Rs.3000	35	58.32	9	15	0	-			
	b. Rs.3001- Rs.6000	12	20	1	1.66	0	-			
	c. Above Rs.6000	3	5	0	-		-			

Sl. No	Demographic Variables	Quality of sleep						$\chi^2$	Table Value	Significance
		Good Sleep		Fairly Good Sleep		Poor Sleep				
		No	%	No	%	No	%			
8	Duration of Illness									
	a. Less than one year	40	66.66	8	13.33	0	-	0.66 (df=6)	12.59	NS
	b. 1-3 years	9	15	2	3.33	0	-			
	c. 3-5 years	1	1.66	0	-	0	-			
	d. Above 5 years	0	-	0	-	0	-			
9	Type of treatment									
	a. Radiation therapy	8	13.33	1	1.67	0	-	0.18 (df=4)	9.48	NS
	b. Chemotherapy	31	51.66	7	11.66	0	-			
	c. Surgery	11	18.33	2	3.33	0	-			

NS- Not Significant

S- significant

P<0.05

Chi square values were calculated to find the association on quality of sleep among cancer patients, with their selected demographic variables such as score with age ( $\chi^2=4.41$ ), sex ( $\chi^2=0.65$ ), educational status ( $\chi^2=24.67$ ), marital status ( $\chi^2=14.18$ ), occupational status ( $\chi^2=3.04$ ), religion ( $\chi^2=2.21$ ), family income( $\chi^2=2.69$ ), duration of illness ( $\chi^2=0.66$ ), and type of treatment ( $\chi^2=0.18$ ).

It revealed that there is no association between the quality of sleep after intervention among cancer patients with their selected demographic variables except the educational status.

## **CHAPTER – V**

### **RESULT AND DISCUSSION**

This chapter deals with the results and discussion of the study. It has been discussed based on the objectives of the study.

The aim of the study was to assess the effectiveness of acupressure on improving the quality of sleep among cancer patients at H.C.G. cancer center, Erode. A sample of 60 cancer patients who met the inclusion criteria were selected for the study by using non-probability purposive sampling technique. Effectiveness of acupressure was assessed using Pittsburg sleep quality index (PSQI) scale.

#### **Description of demographic variables of cancer patients**

Distribution of cancer patients according to their age group depicts that the highest percentage 40 (66.67%) of patients belonged to the age group of 46-50 years; 8 (13.33%) were in the age group of 35-40 years, 12 (20%) were in the age group of 41-45 years.

Percentage wise distribution of cancer patients according to their sex reveals the higher percentage 35 (58.33%) were females when compared to males 25 (41.67%). Females are more affected than Males.

The data showed that most of the patients 52 (86.66%) were married, 4 (6.67%) were single and only 4 (6.67%) were widower/widow. Among 60 cancer patients 54 (90%) cancer patients were Hindu and only 2 (3.33%) were Christian and 4 (6.67%) were Muslim.



In relation to monthly income, 44 (73.33%) were in the income group of Rs.1000-Rs.3000 and 13 (21.67%) were in the income group of Rs. 3001-Rs. 6000 and only 3 (5%) had family income of above Rs. 6000.

According to the distribution of cancer patients on the basis of duration of illness majority 48 (80%) were suffering from cancer for less than one year duration, only 11 (18.33%) were had 1-3 years duration of illness and only 1 (1.67%) had 4-5 years of illness. These findings are consistent with the findings of **Liu L., (2008)**, who reported that sleep disturbances are reported among 30% to 75% of newly diagnosed or recently treated cancer patients.

With regard to type of treatment 9 (15%) of cancer patients receives radiation treatment and about 38 (63.33%) of cancer patients receives chemotherapy and 13 (21.67%) were post operative patients. These findings are consistent with the findings of **Walker A.J.,(2010)**, who reported that adolescents receiving chemotherapy reported significantly worse sleep quality and sleep hygiene behaviors than healthy adolescents. Sleep hygiene and demographic variables accounted for 24% of the variance in sleep quality.

These findings are consistent with the findings of **Engstrom et. al., (2001)** reported the results of a telephonic survey of 150 patients with breast and lung cancer in various stages of treatment. 44% reported sleep disturbances in the month before the interview which was not related to diagnosis, stage of disease or treatment modality.

## **THE OBJECTIVES OF THE STUDY**

1. To assess the quality of sleep among cancer patients before intervention.
2. To assess the quality of sleep among cancer patients after intervention.
3. To assess the effectiveness of acupressure on improving the quality of sleep among cancer patients.
4. To find the association between the quality of sleep among cancer patients after intervention with their selected demographic variables.

### **The first objective is to assess the quality of sleep among cancer patients before intervention**

Among 60 cancer patients, 7 (11.67%) of cancer patients only had good sleep and 46 (76.66%) had fairly good sleep and 7(11.67%) had bad sleep before intervention.

These findings are consistent with the findings of **Parker K.,(2007)** who reported that among 114 advanced cancer patients , mean global sleep quality score was  $12.0 \pm 4.6$ .The use of the PSQI questionnaire in cancer patients demonstrated that these subjects were prone to get poor sleep quality.

These study findings are also consistent with the findings of **Kvale E., (2005)** who reported that anxiety and depression, common psychological responses to the diagnosis of cancer, cancer treatment and hospitalization, are highly correlated with insomnia. Cancer associated insomnia is the extremely broad range of prevalence and it estimates about 19% - 95%.

**The second objective is to assess the quality of sleep among cancer patients after intervention**

Among 60 cancer patients, majority 50 (83.33%) had good sleep and 10 (16.67%) of cancer patients had fairly good sleep after intervention.

This study finding are consistent with the findings of **Cerrone R .et.al., (2008)** who reported that, there is an improvement in the quality of sleep in 11 (79%) patients among 14 cancer patients. This study confirms the efficacy of acupressure in the treatment of sleep disorders, particularly in cancer -related insomnia.

**The third objective is to assess the effectiveness of acupressure on improving the quality of sleep among cancer patients**

It was found that the mean scores of quality of sleep among cancer patients before intervention and after intervention were 138.16 (SD  $\pm$  3.23) and 30.51 (SD  $\pm$  2.32) respectively. The mean score sleep is significantly lower after intervention than the mean score of sleep before intervention. The 't' value is 23.06(1.960), which was significant at 0.05 level .

This study findings are consistent with the findings of **Ummareddy M., (2005)** who reported that there was a significant improvement in the overall quality of sleep 21 (84%) in the experimental group after acupressure than the control group.

This revealed that there is a significant improvement in quality of sleep among cancer patients after acupressure.

There fore, the research hypothesis  $H_1$  that is, There is a significant improvement in the quality of sleep among cancer patients after acupressure, was accepted.

**The fourth objective is to find the association between quality of sleep among cancer patients after acupressure with their selected demographic variables.**

Chi square values were calculated to find out the association (Tab. 5) on quality of sleep among cancer patients, with their selected demographic variables such as score with age, sex, educational status ( $\chi^2=24.67$ ), marital status, occupational status, religion, family income, duration of illness, and type of treatment.

These study findings are consistent with the findings of **Shuman A.G. et. al .,(2010)** who reported that both base line (67.1%) and 1 year post diagnosis (69.3%) sleep scores were slightly lower than population means (72). younger age were statistically predictors of poor sleep 1 year after diagnosis of head and neck cancer ( $P<.05$ ).

Smoking, alcoholism and female sex were marginally significant ( $P<.09$ ). Type of treatment (Surgery, radiation and / or chemotherapy), primary tumor site and cancer stage were not significantly associated with 1 - year scores.

These study findings are also consistent with the study findings of **Mystakidou K. et.al., (2007)** who reported that mean global score of sleep quality was  $12.01 \pm 4.6$  and however the various demographic variables and clinical features did not affect quality of sleep.

This study finding are also consistent with the findings of **Ummareddy M., (2005 )** who reported that there was a no statistically significant association between the selected demographic variables such as age, sex, occupation, education, religion, language and marital status and the quality of sleep.

It revealed that there is no association between the quality of sleep among cancer patients except educational status with their selected demographic variables.

There fore, the research hypothesis  $H_2$  that is, There will be a significant association between the quality of sleep after intervention with their selected demographic variables, was rejected.

## **CHAPTER VI**

### **SUMMARY, CONCLUSION, IMPLICATIONS , RECOMMENDATIONS AND LIMITATIONS**

**This chapter is divided into 5 aspects**

- Summary
- Conclusion
- Implications
- Recommendations
- Limitations

#### **SUMMARY**

The aim of this study was to assess the effectiveness of acupressure on improving the quality of sleep among cancer patients. An evaluative study with pre experimental design was used for the study (one group pretest and post test) which was conducted at H.C.G cancer center at Erode. The conceptual framework was based on Newman's system model (1989). The subjects were selected by non probability purposive sampling. 60 cancer patients with the sleep score of more than 5 before intervention were selected for the study. The instrument used for this study was Pittsburg Sleep Quality Index (PSQI) scale before and after intervention.

The study was conducted at H.C.G cancer center and cancer patients admitted in the ward were included in the study and confidentiality was assured. The investigator gave brief introduction about the study and assessed the quality of sleep and demographic variables. Patient's quality of sleep was assessed using PSQI scale before intervention and acupressure point were selected at wrist ,back

of the ear and in calf muscle and acupressure was given before bedtime for about 9 minutes (3 min/acupoint) to induce sleep. This acupressure therapy was given for 7 days at the bed time and the sleep scores were assessed on the 8<sup>th</sup> day morning using the PSQI Scale after intervention. Sleep diary also has been maintained by the investigator from the very next morning for 7 days which helps the investigator to know the sleep wake pattern of each sample. Acupressure self instructional module was given after the completion of post test which can be utilized at home to perform self acupressure.

### **MAJOR FINDINGS OF THE STUDY:**

- Majority of patients in the age group of 46-50 years were 40 (66.67%) and majority of patients 52 (86.66%) were married.
- Majority of patients 54 (90%) cancer patients were Hindu and majority of 48 (80%) were had less than one year duration of illness.
- Majority of about 38(63.33%) of cancer patients receives chemotherapy.
- Prior to implementation of acupressure 7 (11.67%) of cancer patients only had good sleep and 46 (76.66%) had fairly good sleep and 7 (11.67%) had bad sleep.
- After intervention majority 50(83.33%) had good sleep and 10(16.67%) of cancer patients had fairly good sleep.
- The mean score of sleep after intervention is lower than the mean score of sleep before intervention.
- The 't' value is 23.6 (1.960), which was significant at 0.05 level which shows there is a significant improvement in the quality of sleep.

- No significant association was found between the sleep scores after intervention with their selected demographic variables except educational status.

## **CONCLUSION:**

The objective of the study is to assess the effectiveness of acupressure on improving quality of sleep among cancer patients after the application of acupressure for 7 consecutive days before bed time. A total of 60 cancer patients were given acupressure in which 50 (83.33%) patients had shown significant improvement in their sleep.

It was found that the mean scores of quality of sleep before and after intervention among cancer patients were 138.16 (SD  $\pm$  3.23) and 30.51 (SD  $\pm$  2.32) respectively. The mean score of sleep before intervention is lower than the mean score of sleep after intervention. The 't' value is 23.06 (1.960), which was significant at 0.05 level.

## **NURSING IMPLICATIONS**

The findings of the study have implications in various areas in nursing service, nursing education, nursing administration and nursing research.

## **NURSING SERVICES**

- ❖ Continuous nursing education program can be conducted for staffs to provide knowledge on complementary and alternative therapies.
- ❖ The gained knowledge can be applied in practice, findings will help the nursing professional to assess the effectiveness of acupressure on improving sleep for cancer patients.



- ❖ Acupressure therapy can be made accessible to all patients to induce sleep, as it does not have any adverse effects.
- ❖ Acupressure can be made to practice as a routine nursing care.

## **NURSING EDUCATION**

- ❖ Nursing students should be educated on various system of alternative therapies to alleviate the sufferings of hospitalized cancer patients.
- ❖ The knowledge and learning experience of students on acupressure will help in adopting these non -pharmacological measures to improve sleep among cancer patients.
- ❖ It emphasizes the student nurses to focus not only on the curing aspects but also to maximize the quality of life.
- ❖ The nursing education program must be oriented towards the complementary and alternative therapy approach thus will prepare the nurses to assist the patients.

## **NURSING ADMINISTRATION**

- ❖ The nurse administrator should motivate the nurse and student nurses to do related studies and to imply it in practice.
- ❖ The nurse - educator can provide in service education to nursing personnel to update their knowledge about the method of treatments like acupressure and its valuable benefits to the patients community.
- ❖ The nurse administrator can plan the staff development program for nurses on complementary therapies of cancer to alleviate the sufferings of cancer patients.

- ❖ The nurse administrator can encourage all the nursing staff to undergo training on acupressure as one of the management for sleep disturbances.

## **NURSING RESEARCH**

- The same study can be conducted in other areas like orthopedics, nephrology and surgical patients using acupressure to induce sleep.
- The findings can be utilized for further research in Cancer patients.
- Similar study can be conducted with randomization by selecting a larger sample on a long term basis.
- Nursing research should be directed to further explore and update knowledge of oncology unit nurses towards patients during hospitalization and treatment which enhances the quality of life.

## **RECOMMENDATIONS**

1. Similar study can be carried out on larger sample.
2. Similar study can be carried out using experimental and control group to control the extraneous variables.
3. Study can be carried out to compare the effectiveness of acupressure with other complementary and alternative methods or technique.
4. This study can be done by maximizing the time and duration of acupressure therapy.
5. Various other benefits of acupressure such as reducing pain nausea and vomiting among cancer patients can be carried out .

6. Similar study can be done in different setting to evaluate the findings of the present study.

## **LIMITATIONS**

The investigator faced difficulty to carry out acupressure therapy when patients were retires from daytime functions at late night.

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#### APPENDIX - A



adding life to years

South Asia's Largest Cancer Care Network

## Cancer Center

**Dr. P. Suthahar** MDRT  
Consultant Radiation Oncologist  
Admin. In - charge

24.03.2010

To:  
The Principal,  
Bishops College of Nursing,  
Dharapuram, Tirupur.

**Dear Sir,**

**Sub:**

Permission to carry out research for **Ms.M.Uma**, IInd year M.Sc Nursing student on "A study to evaluate the effectiveness of acupressure on improving quality of sleep among the cancer patients" – **Reg**

**Ref:** Your letter No: BCN/115/1/3/2010 dated 23.03.2010

With reference to the above, the student is permitted to undergo research in our institute subject to the following terms and conditions:

1. They should abide by the hospital rules and regulations.
2. They should not unnecessarily interfere with patients

Regards,

**Dr.P.Suthahar M.D RT**

**Consultant Oncologist and Admin Incharge**

# 547, Perundurai Road, Natesar Mill Compound, ERODE - 638 011. Ph : 0424 - 2262035, 4021845, Fax : 4021545  
web : [www.hcgoncology.com](http://www.hcgoncology.com) e-mail : [erodehcgonco@gmail.com](mailto:erodehcgonco@gmail.com)

**Excellence in Oncology Care and Research**



**APPENDIX - B**  
**LETTER SEEKING EXPERT'S OPINION FOR**  
**VALIDITY OF TOOLS**

From

Ms. M. Uma  
M.Sc. (Nursing) II year,  
Bishop's College of Nursing,  
Dharapuram.

To

Respected Madam/Sir,

**SUB:** Requisition for content validity of tool

I am M.Sc. (Nursing) second year student of Bishop's College of Nursing, Dharapuram, under Dr. M.G.R Medical University, Chennai. As a partial fulfillment of my M.Sc.(N) Degree Programme, I am conducting a research on "**A study to evaluate the effectiveness of acupressure on improving the quality of sleep among cancer patients in H .C .G cancer center at Erode**". One of the initial steps of the research study is to develop a tool. I am sending the above stated for content validity and for your expert and valuable opinion.

I will be very thankful to return it to the undersigned.

“

Yours sincerely,

**Encl :**

**( M.UMA )**

1. Certificate of content validity
2. Statement of problem, objectives, operational definition, hypothesis
3. Description of the tool and tool for data collection
4. Self addressed envelope

**Principal**

## APPENDIX – C

### ***MEDICAL SURGICAL NURSING***

#### LIST OF EXPERTS OF VALIDATION

- 1) **Dr.J.Silvia Edison, M.Sc(N)., Ph.D.,**  
Principal,  
Department of Medical Surgical Nursing,  
Alshifa College of Nursing,  
Malappuram.
- 2) **Mrs. , Radha.K, M.Sc(N).,**  
Reader,  
Department of Medical Surgical Nursing,  
Adhiparasakthi College of nursing ,  
Kancheepuram.
- 3) **Mrs. Asha S Kumar, M.Sc(N).,**  
Senior lecturer,  
Department of Medical Surgical Nursing,  
Kottayam Medical college  
Kottayam.
- 4) **Mrs. C.Kuzhanthaiammal, M.Sc(N).,**  
Professor,  
Department of Medical Surgical Nursing,  
K.M.C.H College of nursing,  
Coimbatore.
- 5) **Dr. Sudhahar, M.D (RT).,**  
Consultant Radiation oncologist,  
H.C.G Cancer center,  
Erode.

## APPENDIX - D

### CERTIFICATE FOR VALIDITY

This is to certify that the standardized Pitts burg sleep quality index scale on " A study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G.Cancer center at Erode " has been validated by me and found appropriate with mentioned suggestions.

Signature : 

Name : Dr. J. Silvia Edison .

Designation: Principal

College : Al-Shifa College of Nursing .

Dr. J. Silvia Edison M. Sc(N), PhD  
Principal  
Al-Shifa College of Nursing  
Edison Valley, Nr. Jubilee Jn.  
Arakkalpuram P.O. Perinthalmanna,  
Kozhikpuram, Kerala - 670 321

### CERTIFICATE FOR VALIDITY

This is to certify that the standardized Pitts burg sleep quality index scale on " A study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G.Cancer center at Erode " has been validated by me and found appropriate with mentioned suggestions.

Signature :



Name :

RADHA.K

Designation:

READER

College :

ADHIPARASAKTHI COLLEGE OF  
NURSING,  
MAPINS,  
Melmaruvathur - 603 319  
Kanchi Perambur (D.T)  
Tamil Nadu.

### **CERTIFICATE FOR VALIDITY**

This is to certify that the standardized Pitts burg sleep quality index scale on " A study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G.Cancer center at Erode " has been validated by me and found appropriate with mentioned suggestions.

Signature :



Name :

**ASHA S KUMAR**  
SENIOR LECTURER  
COLLEGE OF NURSING  
MEDICAL COLLEGE KOTTAYAM

Designation :

College :

### **CERTIFICATE FOR VALIDITY**

This is to certify that the standardized Pitts burg sleep quality index scale on" A study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G.Cancer center at Erode " has been validated by me and found appropriate with mentioned suggestions.

Signature :



Name

: C. KULANTHAIAMMAL

Designation:

PROFESSOR

College

: K.M.C.H. COLLEGE OF NG

### CERTIFICATE FOR VALIDITY

This is to certify that the standardized Pitts burg sleep quality index scale on" A study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G.Cancer center at Erode " has been validated by me and found appropriate with mentioned suggestions.

Signature : V. Karirwanathan

Name : Dr. V. Karirwanathan M.S.

Designation: Resident Surgeon

College : HCG Cancer Center/Erode

**HCG-CANCER CENTRE**  
NATESAR MILL COMPOUND,  
547 PERUNDURAI ROAD,  
ERODE-638 011

APPENDIX - E  
**CERTIFICATE OF ENGLISH EDITING**

TO WHOM SOEVER IT MAY CONCERN

This is to certify that the dissertation work, " A Study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G. cancer center at Erode" done by Ms.Uma.M, II Year M.Sc (Nursing) student of Bishop's College of Nursing, Dharapuram is edited for English Language appropriateness by \_\_\_\_\_

Date : 12.01.11

Address :

  
Signature  
P.SAMPATH

**P. SAMPATH, M.A., M.Phil., M.Ed.,**  
**Lecturer in English,**  
**Maharani Teacher Training Institute,**  
**Dharapuram.**



APPENDIX - F

CERTIFICATE OF TAMIL EDITING

TO WHOM SOEVER IT MAY CONCERN

This is to certify that the dissertation work, "A Study to evaluate the effectiveness of acupressure on improving quality of sleep among cancer patients in H.C.G. cancer center at Erode" done by Ms.Uma.M, II Year M.Sc (Nursing) student of Bishop's College of Nursing, Dharapuram is edited for Tamil Language appropriateness by \_\_\_\_\_

Date : 16.05.10

Address : **V. THIYAGARAJAN, M.Com., M.Phil., B.Ed.**  
PG Asst. in Commerce  
Govt Boys Hr.Sec.School,  
PETHANAICKEN PALAYAM  
SALEM - 636 106.

Signature

## **APPENDIX - G**

### **PART -I**

#### **DEMOGRAPHIC VARIABLES OF CANCER PATIENTS:**

Please read all the following questions carefully and select the answer and place a tick mark ( ✓ ) in appropriate space provided on the right side of each question.

1. Age (in years)

a. 35 – 40

☐

b. 41 – 45

☐

c. 46 – 50

☐

2. Sex

a. Male

☐

b. Female

☐

3. Educational status

a. No formal education

☐

b. Primary education

☐

c. High school

☐

d. Higher secondary

☐

e. Degree

☐

4. Marital status

a. Single

☐

b. Married

☐

c. Widow

☐

d. Divorced

☐

5. Occupation

a. Government employee

☐

b. Private employee

☐

c. Self employee

☐

d. Unemployed

☐

6. Religion

a. Hindu

☐

b. Christian

☐

c. Muslim

☐

7. Family monthly income:

a. Rs. 1000 – 3000/-

☐

b. Rs. 3001 – 6000/-

☐

c. Above Rs. 6001/-

☐

8. Duration of illness

a. Less than one year

☐

b. 2 - 3 yrs

☐

c. 3 - 5 yrs

☐

d. Above 5 yrs

☐

9. Type of treatment

a. Radiation therapy

☐

b. Chemotherapy

☐

c. Surgery

☐

10. Taking any Medications to induce sleep; yes/no

If yes, name the medication \_\_\_\_\_

## **PART - II**

### **PITTSBURGH SLEEP QUALITY INDEX SCALE**

(Buysee .D.Jet .al,1989)

#### **INSTRUCTIONS:**

The following questions relate to your usual sleep during past 1 week. Your answer should indicate the most accurate reply please answer all questions.

#### **DURING THE PAST 1 WEEK:**

1. When have you usually gone to bed.....
2. How long (in minutes) has it taken you to fall asleep each night.....
3. When have you usually got up in the morning.....
4. How many hours of actual sleep did you get at night (this may be different than the number of hours you spend in bed).....

5. How often have you had trouble sleeping because you...	<b>Not during past 1 week (0)</b>	<b>Less than once in a week (1)</b>	<b>Once or twice in a week (2)</b>	<b>Three or more times in a week (3)</b>
a) Cannot get sleep with in 30 minutes				
b) Wake up in the middle of the night or early in the morning				
c) Have you got up to go to toilet				
d) Cannot breath comfortably				
e) Cough or snore loudly				
f) Feeling cold				
e)Feeling hot				
h)Have bad dreams				
i) Have pain				
j) Please describe other reasons including how often you have had trouble sleeping because of this reason(s )				
6) How often you take medicine (prescribed over the counter) to help you sleep				
7. How often have you had trouble staying awake while performing daily activities				
8. How often you had problem to keep up interest to get things done				
	<b>Very good (0)</b>	<b>Fairly good (1)</b>	<b>Fairly bad (2)</b>	<b>Very bad (3)</b>
9. How would you rate your sleep quality overall				

## PART - III

### SLEEP DIARY (National sleep foundation ,2002)

Fill the sleep diary each day for one week. Keep your answers brief but be as specific as possible. It could also help your doctor to know more about what affects your sleep.

DAY	1	2	3	4	5	6	7
Time you went to bed last night							
Time you get up Today							
<b>1. Quality of sleep last night:</b>							
a) How long did it take to fall asleep?							
b) Total amount of time you slept							
c) Describe the quality of sleep that night (frequent waking? Deep sleep? )							
<b>2. If you wake up during the night...</b>							
A) How often							
b) About what time(s)?							
c) Describe what woke you each time? (For example) worry, physical discomfort, sweating, need to go to toilet?							
d) Whether you able to fall back to sleep after you woke up?							
e) If not, How long did you remain awake?							

DAY	1	2	3	4	5	6	7
f) Whether you snore, kicks or tozing and turning during sleep? (Ask your bed partner if you cannot recall )							
g) Did you feel your breathing is Stopping or a choaking sensation?							
<b>3.Actives that may have affected your sleep last night:</b>							
a) Did you have any difficulty or stress during the day?							
b) Did you eat close to bed time?							
c) At what time?							
d) Was it a fairly heavy meal?							
e) Just as snack?							
f) Did you drink any beverage, containing alcohol, caffeine and tea?							
g) At what time?							
h) How many cups or glasses?							
i) Did you take any medications or drugs that evening?							
j) If yes, which one?							
k) If yes, at what time?							
l) Did you smoke?							
m) At what time?							
n) How many cigarettes or beedis?							
o) Did you take pan / Gutka							



DAY	1	2	3	4	5	6	7
<b>4. The day after:</b> a) How well you were able to pursue your days activities today? b) Did you feel well rested when you started your day? c) Brief describe your energy level, sleepiness, fatigue, mood ability to get work done. Did you need to take a nap? Add duration if possible							

## gFjp-m

### RaFwpg;G tptuk;:

fPNo nfhLf;fg;gl;Ls;s Nfs;tpfis ftdkhf thrpf;fTk;. rhpahd gjpiy  
Njh;e;njLj;J Nfs;tpfSf;F tyJ Gwkhf nfhLf;fg;gl;Ls;s fl;l;jpw;;Fs; 'bf;"  
nra;aTk;.

#### 1. taJ

m. 35 taJ Kjy; 40 taJ tiu

☐

M. 41 taJ Kjy; 45 taJ tiu

☐

,. 46 taJ Kjy; 50 taJ tiu

☐

#### 2. ghypdk;

m. Mz;

☐

M. ngz;

☐

#### 3. fy;tpj;jFjp

m. gbg;gwptpy;yhjth;

☐

M. Kjy;epiyfy;tp

☐

,. ,uz;lhk;epiy fy;tp

☐

<. Nky;epiyfy;tp

☐

c. gl;ljhph

☐

#### 4. jpUkzkj; jFjp

m. jpUkzkhfhjth;

☐

M. jpUkzkhdth;

☐

,. tpjit

☐

<. tpthfuj;jhdth;

☐

5. njhopy; jFjp  
 m. murhq;f Ntiy nra;gth;  
 M. jdpahh; Ntiy nra;gth;  
 ,. Ranjhopy; nra;gth;  
 <. Ntiyapy;yhjth;
6. kjk;  
 m. ,e;J  
 M. fpwp];Jth;  
 ,. ,];yhpah;
7. khjhe;jpu FLk;g tUkhdK;  
 m. &gha; 1000 Kjy; 3000 tiu  
 M. &gha; 3001 Kjy; 6000 tiu  
 ,. &gha; 6000f;Fk; Nky;
8. Neha;tha;g;gl;lJpd; fhy tiuaiw  
 m. xU tlj;jpw;Fk; FiwT  
 M. xd;W Kjy; 3 tUlK; tiu  
 ,. 4Kjy; 5 tUlK; tiu  
 <. 5 tUlj;jpw;Fk; Nky;
9. Nkw;nfhs;sg;gLfpd;w kUj;Jt Kiw?  
 m. fjph;tPr;R Kiw  
 M. fPNkhnjugp  
 ,. mWit rpfpr;ir
10. J}f;fj;jpw;fhf kUe;J VNjDk; cl;nfhs;fpwPh;;fsh? Mk;/,y;iy Mk;  
 vdpY;> kUe;jpd; ngah; -----

## gFjp- M

gpl;];gh;f; J}f;fj;jpw;fhd msTNfhy;

**Fwpg;Gfs;**

fPNo nfhLf;fg;gl;Ls;s Nfs;tpfs; fle;j xU tuhfykhf cq;fs; J}f;fj;ij  
gw;wpa Nfs;tpfshFk;. cq;fs; gjpy; rhpahdjhfTk; kw;Wk; midj;J  
Nfs;tpfSf;Fk; gjpyspf;fTk;.

fle;j xU thu fhyj;jpy; .....

1. vg;nghOJ ePq;fs; gLf;iff;F nry;tPh;fs;?
2. xt;nthU ehs; ,uTk; J}f;fk; tUtjw;F vt;tsT Neuk; (epkplq;fspy;)  
Mfpd;wJ?
3. rhjhuzkhf ePq;fs; fhiyNtisapy; vg;nghOJ vOtPh;fs;.
4. ,utpy; rhpahf vj;jid kzpNeuk; J}q;fpdPh;fs; ? (,J ePq;fs; gLf;ifapy;  
nrytopj;j Neu;j;jpypUe;J khWg;gl;;lJ).

## gFjp-m

### RaFwpg;G tptuk;:

fPNo nfhLf;fg;gl;Ls;s Nfs;tpfis ftdkhf thrpf;fTk;. rhpahd gjpiy  
Njh;e;njLj;J Nfs;tpfSf;F tyJ Gwkhf nfhLf;fg;gl;Ls;s fl;l;jpw;;Fs; 'bf;"  
nra;aTk;.

11. taJ

m. 35 taJ Kjy; 40 taJ tiu

M. 41 taJ Kjy; 45 taJ tiu

,. 46 taJ Kjy; 50 taJ tiu

☐☐☐

12. ghypdk;

m. Mz;

M. ngz;

☐☐

13. fy;tpj;jFjp

m. gbg;gwptpy;yhjth;

M. Kjy;epiyfy;tp

,. ,uz;lhk;epiy fy;tp

<. Nky;epiyfy;tp

c. gl;ljhhp

☐☐☐☐☐

14. jpUkzkj; jFjp

m. jpUkzkhfhjth;

M. jpUkzkhdth;

,. tpjit

<. tpthfuj;jhdth;

☐☐☐☐

15. njhopy; jFjp  
 m. murhq;f Ntiy nra;gth;  
 M. jdpahh; Ntiy nra;gth;  
 ,. Ranjhopy; nra;gth;  
 <. Ntiyapy;yhjth;
16. kjk;  
 m. ,e;J  
 M. fpwp];Jth;  
 ,. ,];yhpah;
17. khjhe;jpu FLk;g tUkhdK;  
 m. &gha; 1000 Kjy; 3000 tiu  
 M. &gha; 3001 Kjy; 6000 tiu  
 ,. &gha; 6000f;Fk; Nky;
18. Neha;tha;g;gl;ljpgd; fhy tiuaiw  
 m. xU tlj;jpw;Fk; FiWT  
 M. xd;W Kjy; 3 tUlK; tiu  
 ,. 4Kjy; 5 tUlK; tiu  
 <. 5 tUlj;jpw;Fk; Nky;
19. Nkw;nfhs;sg;gLfpd;w kUj;Jt Kiw?  
 m. fjph;tPr;R Kiw  
 M. fPNkhnjugp  
 ,. mWit rpfpr;ir
20. J}f;fj;jpw;fhf kUe;J VNjDk; cl;nfhs;fpwPh;;fsh? Mk;/,y;iy Mk;  
 vdpY;> kUe;jpd; ngah; -----

## gFjp- M

gpl;];gh;f; J}f;fj;jpw;fhd msTNfhy;

### Fwpg;Gfs;

fPNo nfhLf;fg;gl;Ls;s Nfs;tpfs; fle;j xU tuhfykhf cq;fs; J}f;fj;ij  
gw;wpa Nfs;tpfshFk;. cq;fs; gjpy; rhpahdjhfTk; kw;Wk; midj;J  
Nfs;tpfSf;Fk; gjpyspf;fTk;.

fle;j xU thu fhyj;jpy; .....

1. vg;nghOJ ePq;fs; gLf;iff;F nry;tPh;fs;?
2. xt;nthU ehs; ,uTk; J}f;fk; tUtjw;F vt;tsT Neuk; (epkplq;fspy;)  
Mfpd;wJ?
3. rhjhuzkhf ePq;fs; fhiyNtisapy; vg;nghOJ vOtPh;fs;.
4. ,utpy; rhpahf vj;jid kzpNeuk; J}q;fpdPh;fs; ? (,J ePq;fs; gLf;ifapy;  
nrytopj;j Neu;jpypUe;J khWg;gl;;IJ.)

5. vg;ngghOnjy;yhk; cq;fSf;F J}f;fj;jpy; njhe;juT  
Vndd;why;

**fle;j xU thu fhyq;fspy;  
,y;iy  
(0)**

**xU Kiwf;Fk;  
Fiwthf  
(1)**

**xd;W (m) ,uz;L  
Kiw (2)**

**%d;W Kiw mjw;Fk;  
Nkyhf  
(3)**

m. 30 epkplj;jpw;Fs;shf J}f;fk; tUtjpy;iy  
M. eL,utpy; (m) tpbaw;ngghOjpy; tpopg;G Vw;gLjy;  
,. foptiw nry;tjw;fh vOe;jhpj;jy;  
<. %r;R tpLtjpy; rpukk; Vw;gLjy;  
c. rj;jkhf ,Uky;(m) Fwl;il tpLjy;  
C. Fsph;thf czh;jy;  
v. ntg;gkhf czh;jy;  
V. nfl;l fdT fhZjy;  
I. typ ,Uj;jy;  
X. NtW VNjDk; fhuzk; ,Ue;jhy; Fwpg;gp;lTk;

6. kUj;Jthpd; MNyhridf;Fk; Nkyhf vj;jid Kiw  
J}f;fj;jpw;fhf kUe;J cl;nfhz;Bh;fs;?

7.jpdrhp Ntiyfis nra;Ak; NghJ tpopg;Gld; ,Ug;gjw;F  
vj;jid Kiw rpukkhf czh;e;jPh;fs;?

8. tpUgj;Jld; Ntiyfis nra;J Kbg;gjw;F vj;jid Kiw  
rpukkhf czh;e;jPh;fs;?

kpf ed;W

ed;W

Nkhrk;

kpf Nkhrk;

9. cq;fs; J}f;fj;jpd; juj;jpid vt;thW mstpLfpwPh;fs;?



**gFjp- ,  
J}f;f ml;ltiz**

xU thuj;jpw;F ,e;j J}f;f ml;ltizia epug;gTk;. cq;fsJ gjpy;fs; RUf;fkhdjhTfTk;> njspthdjhfTk; ,Uf;f Ntz;Lk;. ,e;j J}f;f ml;ltiz %yk; cq;fs; J}f;f;ij ghjpf;Fk; fhuzj;jpid gw;wp cq;fs; kUj;Jth; mwpe;J nfhs;s cjtpahf ,Uf;Fk;.

**ehs;**

**1**

**2**

**3**

**4**

**5**

**6**

**7**

New;W ,uT vj;jid kzpf;F ePq;fs; gLf;if;F nrd;wPh;fs;?

,d;W fhiy vj;jid kzpf;F vOe;jPh;fs;?

1. New;W ,uT cq;fs; J}f;f;jpd; juk;

m. ePq;fs; J}q;Ftjw;F vt;tsT Neuk; MfpwJ?

M. nkhj;jkhf vt;tsT Neuk; J}q;fpdPh;fs;?

.. fle;j ,utpy; cq;fsJ J}f;f;jpid tiuaWf;fTk; (mbf;fb

tpopj;jy;/Moe;j cwf;fk;

2. ePq;fs; ,utpy; vOe;jPh;fshdhy;

m. vj;jid Kiw

M. ve;j Neuq;fs;py;

.. vJ cq;fis vor; nra;jJ (v.fh. ftiy> cly; mrjp> tpah;jy;>

foptiw nry;y Neh;e;jhy;).

<. xUKiw J}f;f;jpypUe;J tpopj;J vOe;j gpd;G cq;fshy;

kWgb J}q;f Kbfpwjh?

c. ,y;iy vd;why; vt;tsT Neuk; tpopj;J ,Ue;jPh;fs;?

C. Fwl;il tpLjy;> Gwz;L gLj;jy;> cijj;jy; Nghd;w VNjDk;  
cz;lh?

v. ePq;fs; %r;R epd;WtpLtJ Nghy; (m)  
GiwVWtJNghy; czh;e;jPh;;fhs?

3. fle;j ,utpy; cq;fs; J}f;fj;ij ghjpp;j nray;ghLfs;

m. gfy;ngbOjpy; VNjDk; ghukhfNth fl;lkhfNth ePq;fs;  
czh;e;jPh;fsh?

M. ePq;fs; gLf;iff;F nry;Yk; Neu;jjpw;F Kd;djhF VNjDk;  
czT cl;nfhz;Bh;fsh?

.. rw;W mjpg msptyhd czthf ,Ue;jjh?

<. rpw;Wz;bah?

c.ePq;fs; VNjDk; My;f hy; fye;j ghdk;> B Nghd;wit  
mUe;jpdPh;fsh?

C. ve;j Neu;jjpy;?

v. vj;jid Nfhg;igfs; (m) jk;sh;fs;?

V. khiyNtisapy; VNjDk; kUe;J khj;jpiu cl;nfhz;Bh;fsh?

I. Mk; vdpj; vd;d khj;jpiu kUe;J

x. Mk; vdpy; ve;e Neue;jpy;  
 xi. ePq;fs; Gif gpbj;jPh;fhsh?  
 m. ve;j Neu;jpy;  
 M. vj;jid rpfnul;Lfs;(m) gPbfs;?  
 ,. ghd;(m) Fl;fh VNjDk; cgNahfpj;jPh;fsh?  
 4. gfy;ngghOJ fope;jgpd;  
 m. ,d;iwa jpdrhp nray;ghLfis ve;jsT cq;fshy; nra;a  
 Kbe;jJ?  
 M. ,d;iwa ehis Jtq;Fk;NghJ ed;whf xa;ntLj;jjh  
 czh;e;jPh;fsh?  
 ,. cq;fsJ rf;jpabd; msT J}f;fyf;fk;> Nrhh;T> kdep  
 Mfpatw;iwg;gw;wp RUf;fkf;tpsf;fTk; rpwpajhf Xa;T  
 vLf;f Ntz;nkd czh;fpwPh;fsh? vj;jid kzpNeuk; vd;gij  
 Fwpg;gpITk;.

**APPENDIX –H**

**SELF INSTRUCTIONAL  
MODULE  
ON  
ACUPRESSURE**



**PREPARED BY**

**M. UMA**  
**II YEAR M.Sc(N).,**

## ACUPRESSURE

It is an art and science of alleviating, health problem by application of appropriate pressure on the surface of the body.

### General Guidelines :

- ❖ Assume a comfortable position
- ❖ Perform acupressure before bed time
- ❖ Select and locate the acupressure site appropriately
- ❖ Pressure should be firm enough so that it “Hurts good”
- ❖ Use prolonged finger pressure directly on the point, gradual, steady, penetrating pressure for approximately 3 minutes
- ❖ Each point feels some what different when you press it. Some point feels tense, while others are often sore (or) aching when pressed.
- ❖ If thumb is used give firm pressure on the point at 90° degree angle from the surface of the skin

### ADVANTAGES:

- ❖ It relieves pain
- ❖ Balances the body and maintain a good health
- ❖ Reduces the tension
- ❖ Increase the circulation
- ❖ Enables the body to relax deeply by relieving stress
- ❖ Strengthens immunity to disease and promotes wellness
- ❖ Induces sleep
- ❖ Relieves head, neck and shoulder pain
- ❖ Promote healing of injuries

## **T-Sun of Measurement :**

T - Sun :

It is a distance between 2 points.

1 .- t- sun :



**Breadth of thumb finger**

2.  $1\frac{1}{2}$  t - Sun



**Breadth of index and middle fingers**

3. 3 t- sun



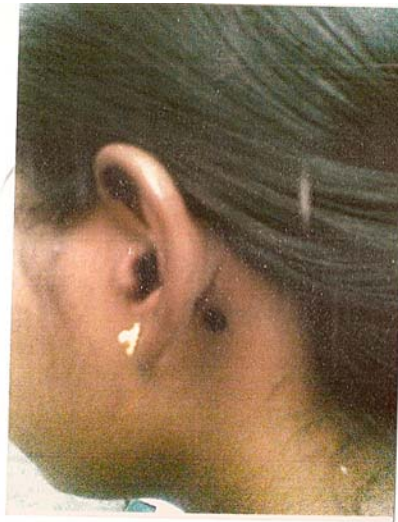
**Four finger breadth**

**Acupressure Site :**

It is the small nerve that most often embedded in or near a muscle or tender sheath which serves to attach a muscle to a bone.

**Acupoints to Induce sleep:**

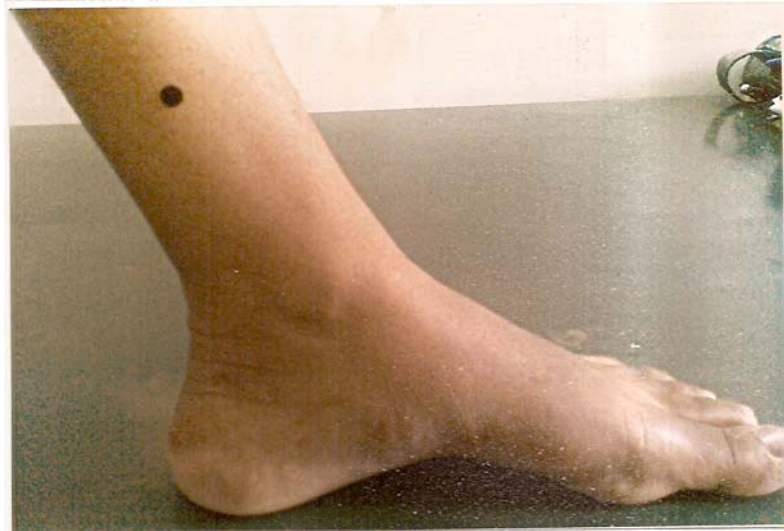
1. Animan I and II : (back of the ear)



2. HT- 7 Shenmen (Inner Side of the Wrist)



3.Sp - 6 : Sanjinijiao (Base of the calf muscle)



**Location and Procedure :**

**Animan I to II**





- ❖ About 1 - t sun behind the slightly above the lobe of the ear the
- him of the skull just at the border of the mastoid process
- ❖ Press hard with the index finger 3 - 5 minutes
- ❖ Forward and backward pressure movement can be applied to these points .

#### **HT - 7 : Shenmen :**



- ❖ Along the inner side of the wrist in the joint between the wrist and hand there is a tender spot
- ❖ Use thumb nails to press hard, release pressure slowly in 3 to 5 minutes

**Sp - 6 : Sanjinijiao :**



- ❖ At the base of the calf muscle about 3 t- sun above the middle of the ankle.
- ❖ Press slowly increase the pressure and release slowly after 3 minutes .

**njhL rpfpr;irf;fhd  
RaFwpg;G tptuk;**



**toq;Fgth;**

**kh. ckh>**

**,uz;lkhz;L KJfiy nrtpyah;>  
gp\g; eh;rpq; fy;Y}hp>  
jhuhGuk;.**

## **njhL rpfpr;ir**

njhLrpfpr;ir vd;gJ cly; gFjpfspy; rhpahd Kiwapy; nfhLf;fg;gLk; mOj;jkhFk;. ,J MNuhf;fpaj;jpy; Vw;gLk; gpur;ridfis fisa cjTk; mwptpay; fiy MFk;.

### **nghJthd Fwpg;Gfs;:**

1. nrsfhpakhd xU epiyapy; (gLj;jy; my;yJ rha;Tehw;fhypapy; mkh;e;jpUj;jy; Nghd;w) ,Uf;f Ntz;Lk;.
2. njhLrpfpr;ir ePq;fs; gLf;iff;F nry;tjw;F Kd;ghf nra;a Ntz;Lk;.
3. njhL rpfpr;ir;fhd rhpahd ,lq;fis Njh;e;njLf;f Ntz;Lk;.
4. 3 epkplq;fSf;F njhlh;e;J njhLrpfpr;irg; gFjpia mOj;jTk; ,e;j mOj;jk; njhlh;r;rpahfTk;> epiyahdjhfTk; kw;Wk; fbdkhjdjhTk; ,Uf;f Ntz;Lk;.
5. xt;nthU njhLrpfpr;irg; gFjpia mOj;Jk; NghJk; tpj;jpahrkhd czh;Tfs; Vw;gLk;.
6. fl;il tpuiy cgNahfpr;Fk; NghJ 90° Nfhzj;jpy; mOj;jkhf njhLrpfpr;ir nfhLf;f Ntz;Lk;.

### **ed;ikfs;**

1. typia Nghf;FfpwJ
2. cliy rkepiyapy; itf;fTk;> MNuhf;fpaj;ij NgzTk; cjTfpwJ.
3. kd mOj;jj;ij Fiwf;fpwJ.
4. ,uj;j Xl;l;ij mjpfhpf;fpwJ
5. ed;whf cliy jsh;r;rpailar; nra;aTk;> cjTfpwJ
6. Neha;vjph;g;G rf;jpia mjpfhpj;J MNuhf;fpaj;ij Nkk;gLj;JfpwJ.
7. J}f;j;ij J}z;LfpwJ.
8. jiy> fOj;J kw;Wk; Njh;gl;ilapy; Vw;gLk; typiag; Nghf;FfpwJ.
9. fhaq;fs; Fzkila cjTfpwJ.

### **‘#d;” mstPL**

#d; vd;gJ ,uz;L Gs;spfs; (my;yJ) ,uz;L gFjpf;F ,ilg;gl;l njhiyT MFk;.

**m. xU #d;**

xU #d; vd;gJ xU fl;il tpuydpd; mfykhFk;.



**M. xd;wiu #d;**

xd;wiu #d; vd;gJ xU Ms;fhl;btpuy; kw;Wk; eLtpuydpd; mfykhFk;.



„ %d;W #d;

%d;W #d; vd;gJ Ms;fhl;b tpuy;> eLtpuy; Nkhjpu tpuy; kw;Wk; Rz;L  
tpuy; ,it ehd;fpd; mfykhFk;.

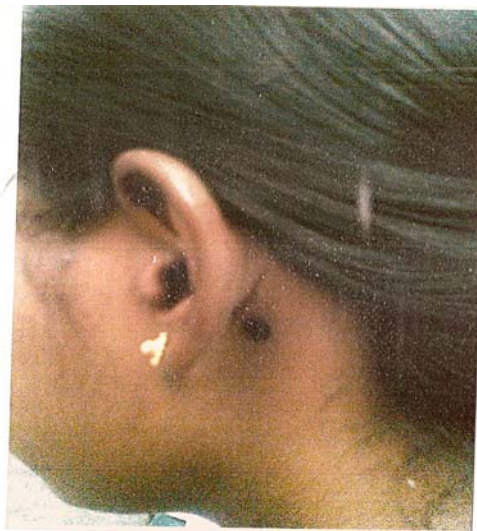


**njhLrpfpr;ir nra;tjw;fhd gFjp:**

jir(my;yJ) jir ehh;g;gFjpfspy; Gije;jpUf;Fk; rpwpa mstpyhd  
euk;Gfs; njhLrpfpr;ir nra;ag;gl Ntz;Lk;. ,t;tifahd euk;Gfs; jiria  
vYk;GfNshL xUq;fpizg;gipy; cjtpahf ,Uf;fpwJ.

**J}f;fj;ij J}z;Ltjw;fhd njhLrpfpr;ir gFjpf;:**

m. mdpkd; I kw;Wk; II (fhjpd; gpd;Gwk; jiy Xl;bd; fiug;  
gFjpf;F mUfpy;)



M. n`r; - 7 n\;nkd; (kzpf;fl;bd; cs;gFjp)



,. v];.gp.-6 rQ;[pdp[pNah: (%l;bw;F fpNo cs;s gpd;Gw  
jirapd; mbg;gFjp)



**njhLrpfpr;ir KiwAk; mjd; ,lq;fSk;  
m. mdpkd; I kw;Wk; II**



- ❖ 1 #d; mstpW;F gpd;GwKk; kw;Wk; fhjpd; kpUJthd fPo;g;gFjpapypUe;J xU #d; mstpW;F Nky; kw;Wk; fhJ vYk;gpd; fiug;gFjpia Njh;T nra;aTk;.
- ❖ Ms;fhl;b tpuy; nfhz;L mg;gFjpia %d;W epkplq;fSf;F fbdkhf mOj;jTk;.
- ❖ Kd;Gwk; kw;Wk; gpd;GwKkhf mOj;j Ntz;Lk;.

**M. n`r;-7 nld;nkd;**



- ❖ cl;Gw kzpf;fl;bd; %l;Lg;gFjpAk;> if kw;Wk; kzpf;fl;bw;Fk; ,ilg;gl;l kpUJthd gFjpia Njh;T nra;aTk;.
- ❖ fl;iltpuy; efg;gFjp nfhz;L ed;whf mt;tplj;ij %d;W epkplk; tiu mOj;jTk; gpd;G nkJthf mOj;Jtij epWj;jTk;.



,. v];.gp-6 (rQ;[pdp[pNah)



- ❖ fZf;fhypd; eLg;gFjpAk;> %l;bw;Fk; fPNo gpd;GwKs;s jirapd; mbg;gFjpapypUe;J 3'#d;" mstpy; cs;s ,lj;ij Njh;T nra;aTk;.
- ❖ mt;tplj;jpy; tpuy;nfhz;L Kjypy; nkJthfTk; gpd;G ed;whfTk; %d;W epkplk; tiu mOj;jTk;> gpd;G mOj;Jtij nkJthf epWj;jTk;.

### **Ra njhLrpfpr;ir**

eLtpuyhdJ ey;y ePsKk;> typikAk; nfhz;ljhF ,Ug;gjhy; Rakhf njhLrpfpr;ir nra;tjw;F eLtpuiy gad;gLj;JtJ rpwg;ghdjhFk;.

## **APPENDIX – I**

### **PROCEDURE**

1. Explain the procedure to the patient.

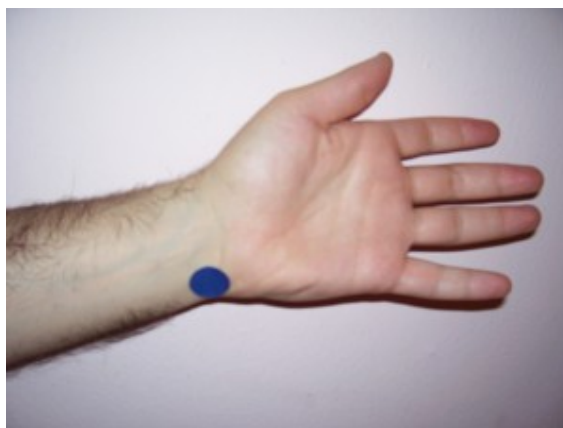


2. Advise the patient to empty the bladder.
3. Provide a comfortable position preferably supine position
4. Select the acupressure site:
  - a) Animan I and II (Back of the Ear):



- About 1 – 2 cm behind and slightly above the lobe of the ear or the rim of the skull just at the border of the mastoid process.

b) HT-7 Shenmen (wrist point):



- Along the inner side of the wrist in the joint between the wrist and hand there is a tender spot.

c) SP-6 Sanjinijao (calf muscle point ):



- At the base of the calf muscle about 3 t- sun above the middle of the ankle.

5. Apply pressure after locating the acupoints.

6. Press hard with the index finger for 3 minutes. Forward and backward pressure movement can be applied to the ear points.



6. To apply pressure at the wrist point use thumb nails to press hard, release pressure slowly for 3 minutes.



7. Press slowly increase the pressure and release slowly after 3 minutes while performing acupressure at calf muscle point.



8. Make the environment conducive to sleep by providing a dim light.